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the president's report

carleton university

1968|9



Sod turning ceremony for the University Centre.

The President's Report

Carleton University

Colonel By Drive, Ottawa, Ontario, Canada

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Report of the President

The past year has witnessed a growing preoccupation with student revolt in North America and the world. The analysis of student-university problems has consumed a great deal of time and space. Around the globe universities have been examined and probed. However one important point of view seems largely to have been neglected; it seems that we have seldom looked at the problems of universities in Canada in the local or Canadian perspective.

It is clear that the situation cannot be judiciously appraised without the broader international context, but the hypothetical isolation of Canadian universities may lend some worthwhile insight. In other terms, there may be something to gain by looking first at the peculiar Canadian circumstance and then at the overall international scene. The more conventional route seems to require the deduction of the Canadian situation from the world one.

Recently much attention has been paid to the incidence of foreign professors on the faculties of our universities. It has been suggested that the Canadian university is threatened by its dependence upon professors from abroad. However, it might be that the immediate foreign threat to Canadian universities lies in the minds of those, both within and without the university community, who too readily confuse external circumstances with Canadian ones. The fair sense of perspective that is basic to sound judgment cannot easily withstand such a confusion. A risk that is assumed through this confusion is the imposition on our university community of antagonistic polarities which probably do not naturally belong.

It can be said at once that one should not wax euphoric about a tension-free Canadian life. But to confuse some of the tensions which are peculiarly ours with some of those of other continents and other countries seems unnecessarily misleading. There is little doubt that the pressures coming to bear on our universities are often quite different from the pressures on universities of other countries.

Canada has many reasons to be optimistic about its future, and the hope we entertain for our society as a whole must exist within our institutions, and, most especially within the university. If we do believe that our society is different from others and that the university is to some extent a reflection of society, then we must agree that the role of our universities is different. Facile analogies drawn between our students and universities and their counterparts abroad will do little to encourage a true appreciation of questions as they arise in Canada. University problems in this country require of everybody measures of patience and tolerance that might not be justified in a less hopeful environment.

THE CANADIAN UNIVERSITY

Our universities form a relatively small and homogeneous group. The Association of Universities and Colleges of Canada has some sixty members, and communication within this community is good. Even with certain differences between English and French language institutions these factors have made for a degree of uniformity of university government which must be unique in a system as decentralized as ours. The very wide disparities that exist among universities and among student bodies, for example in the United States, are not found here. Generally Canadian universities do not remain very distant from each other in system of governance or in more abstract political tone. This is a characteristic of Canadian higher education that is decidedly significant.

Geography has required that each Canadian university tend to appeal more to a regional collectivity than to a cultural or intellectual one. Thus, the student mix will more often than not represent a fair community cross section and, in general, will differ because of regional factors from one university to another. The proportions of the mix will remain essentially similar. The regional orientation of our universities has worked against the tendency, seen in many countries, to concentrate much of higher education in a few large complex centres.

The cosmopolitan multiversity of more densely populated countries is to be found only in a few border-line instances in Canada. The regionally-oriented Canadian university is less likely to show the alienation between administrator and student that is to be found in the multiversities of other countries. The regional bias in Canadian students appears to create a climate encouraging a measure of tolerance and trust not readily found elsewhere.

Some shift from a regional to a more national or cosmopolitan tone is, however, now occurring and it is due, in large part, to the growth and development of graduate schools. Until recently graduate studies in this country had been badly underdeveloped. The role of the graduate school in university reform is a critical one. Much of the reform leadership in American and European universities has been provided by confident and sophisticated graduate schools—schools which have not been strikingly evident in Canada. It is not impossible that more Canadian graduate students abroad have been involved in agitation than have Canadian students at home. Once again when appraising the university crisis in Canada a special characteristic must be taken into account: the relative scarcity of tough, confident, and cosmopolitan graduate schools allows for the absence of a certain critical and harsh tone to our affairs.

The political atmosphere in which the relatively uncomplicated Canadian university finds itself is substantially different from that of the United States or Europe. The political issues with which we are concerned appear, in the main, to be neither as deep-rooted nor as violently provocative as issues elsewhere. Solutions to our pressing domestic issues do not yet seem entirely out of reach to most, and our commitments abroad are not of a nature to disrupt everyday life. Radical ideologies which are born of national crisis and sustained by its growth are not, at this time, indigenous to Canada—nor, it might be said, are governmental and administrative responses to the demands of such ideologies. Once again confusion of foreign politics, issues, and methods, with Canadian needs and ways can be drastically misleading.

By and large Canadian university people have managed to keep the reality of the situation before them. Thus as a general rule the Canadian student has focussed his attention toward goals of higher education, while the students of other countries have often used the university as a prism through which they have directed agitation for social reform.

The climate for university reform in Canada remains good. A threat, however, will continue to come from the facile importation of foreign issues and foreign responses. At present the parties involved in the complex process of reform are seldom being asked to assume risks that are too great for them.

Our political and social lives seem to retain a large element of good faith. It is a sort of good faith that is not readily found elsewhere and to be preserved it must be recognized and appreciated by

students, administrators, and indeed, the public.

CHANGE IN OUR UNIVERSITIES

The circumstances mentioned have allowed for some very significant changes in our universities in the last two years. Probably no country in the world has, in the past several years, witnessed so many significant changes virtually throughout its university community.

The principle areas of reform have been university government and curricular structure. In these matters it is unlikely that any university in the country stands today in the status quo of three years ago. Government by participation and freer, less structured curricula, are no longer, in any sense, *avant garde*—they are fast becoming the order of the day both at Carleton and throughout the country.

Because of the university-oriented interest of student reformers it is likely that the relation of curricular reform to participatory government has been closer here than it has been abroad. It is certainly not coincidental that quite radical curricular change has occurred simultaneously with, or shortly after, the opening of university government to students.

Our experience here at Carleton has tended quite clearly to confirm this conclusion. One of the most sweeping curricular changes in Carleton's history was enacted by Senate this past spring. The traditional "common first year" of the undergraduate arts program was abolished to allow incoming students to freely choose their first year courses. At the same time counselling facilities have been greatly expanded. It is expected that under the new system first year Arts students will get off to a more interesting and worthwhile start. It was the initiative of student members of the new university government that led to these changes coming about this year. It was also student impetus that led quickly to decisions on open meetings of Senate and of faculty boards.

The motives of students who have demanded access to university government have often been misread. The majority of our students are concerned with the basic teaching and learning environment of the university rather than with revolutionary, political and social reforms. Intense student interest in teaching and learning has expressed itself in many different ways. At Carleton this year, students participating in the deliberations of departments, faculty boards, and Senate made substantial contributions to policy formulations. And students were active members of the Commission on Teaching

and Learning in the Faculty of Arts that is expected to bring down an important report early in 1969-70.

The New University Government which I described in last year's report was fully implemented during the past year. The basic objective of the government was to provide students full and equal access to the forums in which policies are formulated and articulated. Beyond representation on departments and faculty boards, six students now sit as Senators and one is a member of the Board of Governors.

N.U.G., I believe, has gone a considerable distance towards establishing the sorts of communication and confidence that are essential to a healthy community. However, it is apparent that further thinking in university government will continue to raise issues and problems that will not be resolved without much soul searching. But further evolution will undoubtedly be desirable and possible on the basis of frank discussion and true efforts at mutual understanding.

THE YEAR IN RETROSPECT

ENROLMENT

This past year a total of 10,150 students took degree credit work in the university. This figure does not include those taking extension courses. Full-time student enrolment on both campuses totalled 5,971 which marked a 15% increase over last year. Of the total, 5,042 were registered on the Rideau River Campus and 936 on the St. Patrick's Campus. The total full-time graduate enrolment was 602, an increase of 23% over last year. The number of part-time students taking degree credit courses increased by 20% over the last year, totalling 4,200 students.

FINANCES

Financially the year presented two quite different pictures; one, on the operational side quite satisfactory, and the other, in capital matters, disappointing.

The year was the second complete one under the Provincial operating formula. The basic operating income unit which provides the base for formula grants was raised by just under 10% from \$1,320 for the previous year to \$1,450 for last year. Virtually all Ontario universities enjoyed what could only be termed a comfortable financial year as the result of having made enrolment projections which turned

out, for a number of reasons, to be lower than the final figures. When last fall more students than had been expected arrived, the university could only gain in dollars.

Developments in capital financing, on the other hand, were to be disappointing. It was announced during the year that the Provincial Government had determined to develop and apply a formula for the allocation of capital monies. Although the final formula would not be established for some time, an interim formula would be used for immediate application. When applied to Carleton the interim formula indicated a very reduced construction program over the next several years.

Over the past years we, and a number of other Ontario universities, have been fortunate in having been able to increase space to meet urgent needs. The stringency of the interim formula forced us to radically revise our plans, and at the present time it is hard to see where there will be adequate working space for students and faculty in a year or two.

The formula is presently under study and we sincerely hope that when the final conditions are announced they will be more generous than they were on the interim basis.

CONSTRUCTION AND PLANNING

Construction that was already underway when the formula was announced of course was not curtailed. Thus in the amount of construction activity going on around us the year was similar to past ones. The Environmental Laboratory of the Department of Biology, completed early in the year, was immediately put to use. The facilities provided spacious and fully equipped experimental green houses and areas for teaching and research.

The Fourth Block of the C. J. Mackenzie Building for Engineering was completed in time to accommodate on its third floor the new School of Architecture with thirty-four first-year students and three full-time faculty members.

New dining facilities were made available to the University with the completion of the new University Commons. Two dining rooms, which together will seat 950 people are serviced by a kitchen capable of producing up to 8,000 meals a day. The facilities will markedly upgrade the service provided to the residential community of the University.

The realization of a major roads program has changed the look of the University from its approaches. A new Bronson Avenue entrance,

which required the erection of an overpass over the railway, allows attractive and efficient access to all parts of the University.

Work continued through the year on the Administration Building and the new Residence Tower, both scheduled for completion before the opening of the fall term. It is hoped that the former will provide improved administrative efficiency. It will, for the first time in many years, house the various departments of administration under one roof.

Starts on construction during the year were limited to the University Centre and a parking garage. The University Centre will provide the focal point for student activities which has long been lacking. It is to be ready by the spring of 1970. The parking structure, seven and one-half storeys high, will be in use this fall and will help to relieve the parking situation which is becoming critical. It is situated on the Bronson side of the railway tracks between the heating plant and the Administration Building. The Provincial Government grant structure does not provide money for such a project and thus the cost of the garage will be borne completely by the users of parking facilities at Carleton. The garage will provide space for 600 cars.

As I have already mentioned, our planning has had to be rethought in the light of the limited availability of capital funds. A number of projects which had passed the planning process have had to be postponed. Included among these are buildings for the Geology and Mathematics Departments and the Engineering Science Library. Two projects remain very much in the stage of active planning—they are a Tower for Division I of the Arts Faculty, and a building for the very rapidly growing Faculty of Architecture.

GENEROSITY

By the end of June, 1969, Carleton's four-year building Campaign for \$3,000,000 had received 11,767 gifts from Ottawa and across Canada, totalling \$2,572,696.87. We are indeed grateful for these contributions which are so vital to the capital expansion of the University. This is a remarkable achievement, yet we must still find approximately \$427,000 if we are to achieve our goal. It is interesting to note that the private funds from the Campaign have contributed significantly to the construction of six major buildings, and several more are in the planning stages.

During the year it was announced that a gift of securities valued at \$300,000 was received from Mr. C. E. Pickering of Ottawa. The return from the securities will be assigned to the Department of

Psychology for research and developmental studies relating to emotionally disturbed children. Carleton is especially appreciative of Mr. Pickering's generosity.

CONVOCATIONS

The largest number of graduates in Carleton's history—1,363—received degrees, diplomas, and certificates at convocation ceremonies in the Fall and Spring. On May 30th, the degree of Doctor of Laws, *honoris causa*, was awarded to two outstanding scholars: Dr. Chalmers Jack Mackenzie, retiring Chancellor of Carleton; and Professor Merle Fainsod, of Harvard University, a world-renowned expert on the Soviet Union.

CHANGING FACES

Spring Convocation, 1969, will be remembered as a significant event in the twenty-seven year history of Carleton University. At that ceremony Chalmers Jack Mackenzie, Carleton's second Chancellor, was succeeded by the Right Honourable Lester B. Pearson. At his installation, Mr. Pearson paid the following tribute to Dr. Mackenzie:

"I realize that as Chancellor of Carleton University I will be trying to fill the big shoes of my predecessor, and old friend, Chalmers Jack Mackenzie; a man whose service to his country has been surpassed by no Canadian; in its variety, its distinction, its devotion and its achievement. Canada, and Carleton, owe him much, much more in fact, because he is that kind of man, than he himself would ever dream of claiming—or even imagining".

Dr. Mackenzie's inspiration and judgment did much to take Carleton through a fifteen-year period which witnessed her growth from a small college in downtown Ottawa of some one thousand students to a modern university of 10,000. Dr. Mackenzie's well-known wit, wisdom, and insight will be sorely missed by everyone at Carleton.

On the same occasion, we warmly welcomed Mr. Pearson as Carleton's third Chancellor. We are indeed fortunate that he accepted our invitation to be Chancellor. Already a member of the Carleton family as a professor of international affairs, Mr. Pearson brings with him the experience of a life-long interest in higher education.

At the end of the year, the Deans of three faculties completed their terms of office. Dr. M. S. Macphail, the distinguished Carleton mathematician, was succeeded by Dr. John Ruptash as the Dean of

the Faculty of Graduate Studies.

Dr. Ruptash, who for a ten-year period led the rapid and vigorous development of Engineering at Carleton (as Dean of that Faculty for the last six), was succeeded by Dr. Donald A. George, a member of the Carleton faculty for five years.

Dr. Gordon C. Merrill, a geographer and formerly Associate Dean of the Faculty of Arts for Division II, became Dean of the Faculty of Arts in succession to Dr. D. M. L. Farr, who at his own request ended a distinguished six-year period of office during which the faculty grew visibly and strongly. After a sabbatical leave for one year, Dr. Farr is returning to his full-time duties as a Professor of History.

A. Trevor Tolley, who is in the Department of English, was named Associate Dean for Division I.

Dr. Thomas N. Brewis took up his position as Director of the School of Commerce at the beginning of the 1968-69 year. Dr. Bohdan Rostyslav Bociurkiw was named Chairman of Carleton's six-year old Committee on Soviet and East European Studies.

Carleton was very pleased to announce that sociologist John Porter, who had left the University for an appointment at the University of Toronto, was returning to the Carleton faculty. Dr. Porter had been at Carleton from 1949 to 1968.

A number of important senior appointments were made to posts of full professor including: Dr. P. Clive (French); Dr. Z. A. Jordan (Sociology); Mr. C. G. Williams (Religion); Dr. J. A. Corry (Political Science); Dr. H. Guindon (Canadian Studies and Sociology); Dr. John Porter (Sociology); Dr. L. Terreaux (French); Mr. M. W. Thistle (Journalism); Dr. V. Dlab (Mathematics); Dr. L. Tormo Sanz (Spanish); and Dr. B. R. Bociurkiw (Political Science and Chairman of the Committee on Soviet and East European Studies).

Mr. James I. Jackson, formerly of Scarborough College, Toronto, was appointed Registrar in November, succeeding John Nicol.

Several men who have given distinguished service to Carleton, some from its founding, retired from the Board of Governors: Senator Norman McL. Paterson, Arthur A. Crawley, General H. F. G. Letson, and Dr. Harry Pullen. Carleton owes a great debt to these individuals who contributed substantially to her development.

On completion of his term as a representative of the alumni, Mr. John Clarke was elected a regular member of the Board. Mr. Douglas Duclos was elected as a nominee of the Alumni Association. Other

new members were Dr. Grace Maynard, formerly a member of the Board, Dr. H. L. Willis, and Mr. A. Andras.

A. D. DUNTON,
President and Vice-Chancellor

Faculty of Arts

Growth, in enrolment and in physical facilities, has been a common phenomenon in Canadian universities during the past decade. This growth has clearly been experienced in the Faculty of Arts at Carleton but it has been accompanied by other features that are perhaps more significant in the on-going life of an institution of higher education. The quality of students admitted to study, the liveliness and scholarly commitment of the faculty, the expansion into new fields of knowledge, the readiness to experiment with curriculum, the academic achievements of faculty and students — these are important indications of a university's vitality. This report on the activities of the Faculty of Arts in the year 1968-69, in addition to recording growth, will attempt to deal with some of these other features.

First, growth, for it upholds and conditions the more intangible aspects in the life of a university. The expansion in enrolment in Arts increased slightly in the year under review, reflecting a trend that seems to be apparent across the country. For 1968-69 the growth rate stood at 18 per cent for students in the Arts degree program, compared to 13 per cent in the year before. For certain divisions within the Arts Faculty it was even higher: 25 per cent in Journalism; 20 per cent in Public Administration. In the School of Commerce, on the other hand, there was a slight decline in enrolment from 1967-68, probably reflecting the uncertainties associated with the School's transformation from a three-year to a four-year program. For 1968-69 the total full-time enrolment in the Arts Faculty on the Rideau River campus stood at 3,471 representing slightly over two-thirds of all students on the campus. Enrolment in the St. Patrick's College division of the Faculty stood at 843, compared with 827 students in full-time study in the previous year.

The increased numbers of students inevitably placed a heavy burden on teaching resources, especially since the complement of aca-

demic departments had been fixed almost a year before. At that time it was found possible to add 24 new positions to full-time faculty strength and the great bulk of these positions were filled during the ensuing months. (Other appointments were also made, of course, to replace persons proceeding on leave or resigning.) This increase brought the faculty in Arts on the Rideau River campus to 204 persons in 1968-69, not including the many other individuals who served as part-time sessional lecturers, conducted discussion groups or taught introductory courses in the language laboratory. At St. Patrick's College the full-time faculty stood at 42 in 1968-69, a gain of six positions over the number of active teaching faculty in the year immediately before the union with Carleton in July, 1967.

The distribution of new faculty members reflected the increasing complexity of the University's curriculum. As departments expanded and some departments were now larger organizations in themselves (the English Department with 30 full-time members, French 24, Political Science 20, for example) they were able to occupy specialized areas of their discipline with new appointments. Thus the English Department added specialists in the English Renaissance period, in bibliography, in Commonwealth literature and in contemporary poetry. The French Department emphasized the nineteenth and early twentieth centuries in their new staff members, while the History Department spread its new appointments over twentieth century Canadian history, Russian history, the period of the French Revolution and the medieval fields. One of the new appointments in Religion was a specialist in the New Testament; Art extended into the Renaissance field; Spanish added strength in Latin American Literature. The Economics Department added strength in quantitative methods and analysis, and the study of planned economies in the Soviet sphere of influence. New appointments in Sociology included specialists in sociological theory. In the Department of Political Science appointments were made to give developing strength to the behavioural science aspect of the discipline and to add to the established strength in classical theory. In summary, appointments within the Faculty of Arts maintained a balance between established fields that required more teaching and research strength and new fields within disciplines that required initial development.

At St. Patrick's College new faculty positions were created in Psychology, Sociology, Economics, French and English. These were all disciplines in which the pressure of student numbers has become

uncomfortable. Additional teaching strength was provided to bring about a more satisfactory staff-student ratio in these popular fields of study.

In 1968-69 the curriculum of the Arts Faculty felt the force of the "winds of change" that have been blowing across universities in the past few years. A proposal to abolish the "common" First Year in Arts and replace it with a "free choice" year was extensively discussed and later endorsed by the Faculty Board and the Senate. It went into effect on 1 May, 1969, to usher in the most sweeping curricular change that Carleton had experienced in more than a decade. Although the full implementation of the new First Year will not occur until 1969-70, a good deal of preparation for the change was undertaken in the latter part of the year under review.

Carleton's "common" First Year derived from the assumption that a liberal arts education was founded first upon an acquaintance with a broad group of subjects, followed by various degrees of specialization as the student moved into the upper years of his university work. Through being obliged to select one course from each of five groups of subjects, the entering student's mind was enlarged and challenged before it was allowed to direct itself to the study of a particular discipline. This concept of education had been established in the Carleton Arts curriculum back in "the mists of antiquity" (in the twenty-five year Carleton sense) and, like so many excellent ideas, had lost some of its original merits in its application. The courses offered in the First Year were more often introductions to their subjects than contributions to a general education; they were unrelated to each other; their justification in the curriculum was unclear or open to challenge, since they were imposed on the student they were often resisted or passively endured. In summary, as R. L. McDougall pointed out in an examination of the problem, "the means adopted to ensure the student's 'informed choice' of a discipline [had] become so enmeshed with one another that they [functioned] badly or not at all."

Dissatisfaction with the First Year requirements was expressed by student members of the Arts Faculty Board as well as by the Senate Commission on Undergraduate Teaching and Learning, created in early 1968 to carry out a searching look at the Arts curriculum. The result was a controversial motion to abolish the "distribution requirements" of the First Year which received the endorsement of the Commission and later the sanction of the Senate.

At St. Patrick's College a similar move was made to change the

distribution requirements of the First Year, although it emerged from a different set of arguments. It was part of a trend towards the liberalization of the First Year curriculum that had been under way before the union with Carleton. Until July, 1967, in a First Year program of six courses, Religion was a compulsory course and a student took either Latin or Classics. In addition the student took a First Year course in English, an introductory course in Philosophy and a First Year course in a modern language. This left only one course for the student's own choice. It had been felt for some time that the compulsory course in Religion was not appropriate in the light of changing circumstances and, after the union with Carleton, this requirement was dropped. At the same time the need to take either Latin or Classics was abandoned and the content of the year was reduced to five courses.

Since that date there has been a continuing discussion, among faculty and students, of the rationale for compulsory courses in the First Year. It appeared that the chief argument in favour of the existing compulsory courses was that of tradition. The first year compulsory courses reflected the limited offering in terms of disciplines in the B.A. program at St. Patrick's College between 1932 and 1960. In recent years the College curriculum has become richer in offerings in the social sciences. It seemed only reasonable to allow students entering university in a general arts program to take advantage of these and other courses in devising a curriculum suited to their needs and interests.

The "free choice" concept gives the entering student the opportunity to explore the breadth and richness that is characteristic of a modern university's curriculum in Arts and Science. It places the responsibility for a meaningful selection of subjects on the student (assisted by whatever counselling the University may be able to provide or he will accept) while affording him the freedom to respond to his own intellectual enquiries. He can sample fields of knowledge which were not available to him in high school, he can study subjects in greater depth than was possible under the "common" First Year. Through the new dispensation it is hoped that both "learning" and "teaching" in the Arts Faculty can become more vital and satisfying. Only time will demonstrate whether the bold hopes embodied in the innovation will be realized.

For 1969-70 the First Year student will be able to select from over seventy courses at the Rideau River campus which are designated as being open to him. At St. Patrick's College almost thirty

courses will be available. The student must take account of departmental provisions in the selection of courses for if he wishes to "major" in particular subjects he must complete necessary prerequisites before enrolling in more advanced courses. The University suggests that he should not undertake more than two courses from any one discipline in the First Year and it advises him to consider the advantages of selecting at least one course from a Faculty other than Arts. It also urges him, as a prospective graduate from a Canadian university, to gain a working knowledge of French before graduation. For its part the University has established a counselling service to operate over the summer months to advise the entering student on the bewildering array of choices that is spread before him. At this time it would be rash to predict the pattern of enrolment that will show itself in the First Year but it is plain that some subjects will gain in adherents at the expense of others. To what extent these shifts will disturb the balance of subjects within the Arts Faculty it is impossible to state. There seems no doubt, however, that Carleton, in company with a number of Canadian universities, is embarking on a liberalization of its academic program that will more truly answer the mood of young people today. In this freeing of the curriculum there is no suggestion that traditional academic standards will be disturbed. Carleton would be untrue to its own traditions if it allowed doubt on this point to be entertained.

In more specific aspects of curriculum, the Arts Faculty also initiated changes in 1968-69. New Honours programs in Anthropology and Religion were established, while Journalism followed the lead of Commerce in transforming its three-year degree into a four-year Honours degree. The last change was designed to provide an education in Journalism that would be distinctive in relation to that offered in the province's colleges of applied arts and technology. The additional year would allow a more professional emphasis to be given to training and would allow more specialization in the academic disciplines that are so important to the interpreter of the contemporary scene. New major programs were established in the two youngest departments of the Arts Faculty — Art and Music — now that faculty strength in these areas warranted such a concentration. The History Department undertook a sweeping revision of its curriculum designed to introduce the student to smaller classes and more sophisticated methods as he moved into the final years of his undergraduate studies.

Several interesting new courses were given approval during the

year. Journalism 100 was redesigned to become an introduction to mass communications in which form it would be taken also by students in the first year of Architecture. The German Department began direct method instruction in the language through the offering of Deutsch I, while the Russian Department, on a trial basis, received approval to offer an introductory course in Ukrainian. The appointment of a specialist in Far Eastern religion and philosophy allowed the Religion Department to schedule a course in this area for the first time.

Within the social sciences a number of new courses were offered for the first time during the year under review. Students in the School of Commerce were introduced to a new methodology in Accounting and Economics 365, Computer Technology Applied to Commerce Problems. A new course in Geography broadened the skills of analysis for students of that subject by introducing quantitative and statistical methods. The Department of Sociology extended its offerings in the first year by offering three separate introductory courses, one as a general survey of the field, a second based upon social issues such as poverty, and a third course that traced the historical development of sociological ideas and theories.

Finally a unique course, sponsored by the Education Committee of the Students' Council and staffed by members of the Sociology, Psychology and English departments, was approved with the intriguing title of Aspects of Twentieth Century Living. This was to be a course oriented to the immediate interests of the limited group of students who would be selected for it.

During the summer and autumn of 1968 St. Patrick's College attempted to examine its position as a division of the Faculty of Arts of Carleton University and to define some concrete goals for the future. A committee under the chairmanship of the Dean, comprising faculty members from various disciplines and several students, met periodically during the summer. In September a report was prepared for the University Senate, stating in broad terms the aims of the College: a distinctive undergraduate academic unit with a maximum enrolment of between 1000 and 1200 students with some residence facilities to be available for both men and women. The College program would be centered on the humanities and social sciences but would include a natural science component with a distinct liberal arts orientation. The academic organization would stress an integrated college structure rather than a rigidly departmental one. Continuing attempts would be made to provide a library collection suited to the

needs of undergraduates enrolled in the college programs.

The St. Patrick's Faculty Board recommended to Senate that the College continue to develop on the present Echo Drive campus; there are distinct advantages to a separate campus from the viewpoint of the academic environment and the spirit that staff and students wish to preserve. At the same time the St. Patrick's Campus is located just a short distance from the Rideau River Campus; thus staff and students can benefit from course programs, library collection and other facilities provided by the University. The Senate of the University endorsed the recommendation for the continued development of the College on the Echo Drive Campus.

After considerable discussion, it was realized that a revision of existing programs could not wisely be undertaken during the current academic year. Attempts in this direction should await the report of the Senate Commission on Undergraduate Teaching and Learning. However, faculty members have been interested in improving methods of teaching and are devising ways of increasing student participation through discussion groups, seminars, and tutorials. It is not possible within the space of this report to mention in detail every individual attempt to make the academic program more meaningful to undergraduates. Mention should be made of a new course, Social Issues, in which five faculty members from five disciplines (Psychology, Sociology, Political Science, Philosophy and Economics) met once a week for three hours with some twenty-five students to listen to papers presented either by invited guests who are specialists in a given field or by members of the group, followed by a lengthy discussion. A course dealing with drama, organized by the English staff, included occasionally a workshop with a stage director and actors participating as guests. The Spanish staff has organized a four-week study session in Mexico City for students from both the Rideau River and the St. Patrick's campuses majoring in Spanish.

In the autumn of 1968 the first stage of renovations in the College building was completed. Considerable work has been done in the north wing where a modern language laboratory, including both a class laboratory and a private practice laboratory with individual booths, has been installed. There are also new classrooms, seminar rooms, faculty offices and lounges.

Research continues to play an important role in the activities of Carleton faculty members in Arts. This is well illustrated by their success in obtaining Leave Fellowships under the competition sponsored by the Canada Council. In 1968-69, for example, members

of the Faculty of Arts obtained ten such fellowships out of the 205 awarded across Canada. This was a degree of success which was higher than the number of faculty members in Arts, in comparison with the total number in all universities, would have warranted. Other younger members of faculty, completing dissertations, received pre-doctoral fellowships from the same source. Still others received research grants from the Council for projects ranging from the control of political broadcasting in Europe, the validity of French-language groups outside the province of Quebec, the geography of regional development in Kenya, to studies in Spanish dramatic literature. The University's own Arts Research and Publications Fund amounted to \$26,000 in 1968-69, a sum which was distributed to 78 faculty applicants. Here the grants were smaller and were used for a variety of purposes mostly connected with the reproduction of material, the employment of research assistants, and the preparation of theses and manuscripts for submission and publication. In addition grants were made to a number of learned journals, some of which were partly sponsored by the University and others in which members of the Carleton faculty were participants or editors.

Several members of the faculty won high honours from their colleagues for their scholarly activities during the year. Dr. Henry B. Mayo of the Political Science Department served a term in 1967-68 as President of the Canadian Political Science Association, while Dr. Fernand Ouellet of the Department of History was elected President of the Canadian Historical Association in June, 1969. Dr. N. H. Lithwick of the Department of Economics won a coveted C. D. Howe Memorial Fellowship for research in a sabbatical year. Dr. Richard G. Glover, Professor of History, for the second time was awarded the Higby Prize of the American Historical Association for the best article appearing in the *Journal of Modern History* over a two-year period.

Students also won distinctions during the year. A great many, planning graduate study after completing undergraduate degrees at Carleton, won fellowships from other universities in Canada and the United States. In the annual international competition for the Woodrow Wilson Fellowships, six Carleton students were named Designates for 1969-70. Two came from Geology and Physics while the other four were from Arts subjects: Psychology, English and Political Science. In addition six other students were given honorable recognition, helping to maintain Carleton's standing as one of the leading Canadian universities in the award of Woodrow Wilson Fellowships

to its graduates.

The year under review was the first in the operation of the academic exchange agreement between Carleton and the University of Leningrad. The memorandum of the agreement was signed by President Dunton on 16 May, 1968, during the course of a visit to the U.S.S.R. The agreement provides for the exchange of scholars and scientists (two from each university) for the delivery of lectures and the exchange of experience in teaching and research. These visits may comprise a total period of four months and are supported by the two universities. The sending university pays the travel costs of its nominees, who are supported, for lodging, stipends and domestic travel, by the receiving university. Two post-graduate students from each university are also to be exchanged, their stay in the other country to cover the length of an academic year. The arrangements for their support are comparable to those for faculty visitors.

In pursuance of the agreement Carleton nominated two graduate students, Miss Tatiana Silieff and Mr. Pierre St. Jean, for a year's study in the Soviet Union. They were accepted by the University authorities at Leningrad and proceeded to Russia in October, 1968. Miss Silieff was interested in studying Russian language and literature, while Mr. St. Jean was concerned with experimental techniques in psychology at Leningrad. They returned to Canada in the late spring, 1969, having gained many valuable insights into their subjects from the experience of living and working at one of the great universities of the Soviet Union.

In May the first faculty visitors from Carleton proceeded to Leningrad. The first to arrive was Dr. H. M. Simpson, Assistant Professor of Psychology, who wished to acquaint himself with recent research in Russia on psychological phenomena having to do with the orienting response. He was given every opportunity to visit research institutes concerned with this subject in and around Leningrad and established valuable contacts with Russian scientists working in this field. A little later Dr. John M. Moore, Associate Professor of Geology, who was in Geneva on a sabbatical leave in 1968-69, arrived in Leningrad, to study the geological features of the Karelian district in which Leningrad is situated. This district offers classic exposures of the Baltic Precambrian Shield which are of interest to Canadian geologists studying similar structures in the Laurentian Shield. Dr. Moore also profited greatly from the relationships he established with Russian geologists.

It was not possible for the University of Leningrad to send visitors

to Carleton in 1968-69 but they are promised for the next academic year and will be warmly welcomed by all members of the Carleton community. The exchange of library materials also got under way in the first year of the exchange and promises considerable usefulness to the participating libraries.

The Leningrad exchange marked another stage in Carleton's development as a centre for teaching and research in Soviet Studies. This growth has been directed by an inter-departmental committee for Soviet and East European Studies which co-ordinates teaching in the area. The committee has sponsored, over the years since 1964, a popular series of evening public lectures in Ottawa on problems of the Communist world. It has also conducted seminars and conferences on the subject which have attracted scholars and experts from both universities and government. In addition it has created an Honours program in Soviet Studies, the first graduates of which were given degrees at the Convocation in May, 1969. Three new faculty members, in History, Economics and Russian, each specializing in some aspect of Russian history, institutions and culture, were appointed in 1968-69. The Chairman of the committee, Dr. J. W. Strong of the Department of History, represented Carleton at the ceremonies marking the 150th anniversary of the founding of the University of Leningrad in February.

The University welcomed a former member of its faculty during the year in the person of H. Scott Gordon, who returned in February to deliver the Plaunt Lectures for 1969. Now a member of the Department of Economics at the University of Indiana, Professor Gordon chose as the topic of his two lectures the challenging subject of the social sciences and the problems of modern man. He provided a valuable exposition of the historical growth of the social sciences as a group of disciplines and then discussed their use in developing policies of social action to cope with the human problems of modern civilization. His focus was mainly on the problems which have emerged in recent years in economically advanced and politically democratic societies such as Canada and the United States. Well known as a stimulating and trenchant commentator on the current scene, Professor Gordon attracted a large audience by his lectures. Those who could not hear them at the time will have the opportunity of reading them later in published form.

Many other visitors came to Carleton during the year, some to give public lectures, some to discuss topics of interest with students and staff. All members of the University derived profit from these

visits, as well as people resident in Ottawa who attended lectures given by the visitors. A partial but representative list of the visitors reads as follows:

Professor Uwe Kitzinger, Nuffield College, Oxford University.
Cyprian Ekwensi, novelist, of Biafra.

Professor Gwendolen M. Carter, Director of African Studies,
Northwestern University.

Michael Hamburger, poet and critic, England.

Dr. Mary Chamot, formerly Assistant Keeper of the Tate
Gallery, London.

Dr. Ronald Grimsley, Department of French Studies, University
of Bristol.

Professor C. P. Courtney, Director of Studies in Modern
Languages, Christ's College, Cambridge University.

Professor Reginald Honeybone, Head of the School of
Education, University of the South Pacific, Suva, Fiji.

Professor S. N. Eisenstadt, Eliezer Kaplan School of Economics
and Social Science, Hebrew University of Jerusalem.

Professor Jean Mesnard, Department of French, University of
Bordeaux.

Dr. Laurie Hergenhan, Department of English, University of
Tasmania.

Dr. René Dumont, Professor of Economics and Social Develop-
ment, University of Paris.

Professor Theodosius Dobzhansky, Rockefeller University, New
York.

Dr. J. D. Ives, Director of Arctic and Alpine Research, Uni-
versity of Colorado.

A recital of the activities of the year would not be complete without noting the fact that 1968-69 saw the introduction of students into the discussions of the academic departments, the Arts Faculty Board, and higher bodies of the University. The department was the basic unit of organization, with students being elected to it by their peers in each year of a program. Most departments received three or four students by this process although some chose to accept a larger student representation. Departmental representatives were eligible to sit on the Arts Faculty Board and indeed, after the system came into operation early in 1969, constituted almost 25 per cent of the membership of the Board. From this level a mechanism of election selected students and faculty for membership on the Senate and Board of Governors. There were a few areas of discussion, such

as personnel matters and the review of individual academic records, which were closed to student discussion but in other fields, and especially in the consideration of curriculum, students were allowed full opportunity to express views and decide on issues.

The experiment is clearly of too short duration to allow final judgments but certain observations are possible. First students have challenged faculty to examine afresh conceptions of the curriculum that were accepted simply because of their long standing. Secondly, students have put forward views of their own and frequently put them forward in so compelling a manner as to attract respect and deserve careful examination. Finally, the presence of students in departments and on the Faculty Board has raised the level of debate and brought about a more rigorous discussion of issues. In all these respects the students' contribution has been constructive. The Faculty of Arts will be a better place in the future for teaching and learning if this attitude continues to run through its deliberations.

D. M. L. FARR,
Dean,
Faculty of Arts

G. C. MERRILL,
Associate Dean,
Division II,
Faculty of Arts

J. J. KELLY,
Dean,
St. Patrick's College division,
Faculty of Arts

Faculty of Science

The undergraduate program of a university, to be viable in our world must, like any living organism, be conscious of the needs of the society in which it exists. It must be adaptive to the demands of rapidly expanding knowledge, yet able to preserve the integrity of its constituent parts so that it can most easily perform its dual function of transmitting the legacy of the past and initiating its newer numbers into its rigorous demands of scholarship and experimentation.

Conscious of these needs, the members of the Faculty of Science in plenary sessions and in departmental discussions turned their attention to four major issues. In the early part of the year we were asked by the Advisory Committee on University Affairs to prepare a statement of our goals or objectives for the next five years. This necessitated a critical examination of present undergraduate and graduate programs; a shrewd (at times almost clairvoyant) estimate of the changing needs of the experimental sciences, and here particular attention was paid to the development of interdisciplinary studies; a plan of how, in the Ontario context, we could develop certain well qualified areas of study; and a means whereby, at the graduate level in particular, by cooperative measures, we could capitalize upon the unique resources, talent, and experience in the Nation's Capital. A tangible outcome of these studies was the adoption, by the Senate of the University, of a completely revised graduate program in Mathematics.

A second major discussion and decision was to adopt the arguments presented by the Department of Biology for the institution of a class of graduate instructors to be known as "Adjunct Professors". This action of the Senate legalized certain exploratory ventures in graduate training that had been in effect and opened the door for greater cooperation between the University and certain scientists of the Research Institute of the Department of Agriculture and the

National Museum who were interested in working with graduate students. In my opinion this is a significant contribution to the furtherance of graduate studies in Canada by a group that has so much to offer in technical ability and knowledge of problems that are peculiar to this country. While I am on the subject of cooperation, I might also add that our joint venture, sponsored by the National Research Council, between the Physics departments of the two Ottawa universities in the use of the dynamitron has continued to expand and that Dr. R. L. Clarke of our staff has been placed in charge of this project .

Thirdly, the Faculty once again examined our entrance requirements and decided to follow the lead of the Ontario Universities Council on Admissions who have been campaigning for a common entrance requirement, by faculties, to the universities of Ontario. Entrance requirements, however, cannot be examined without reference to the first and subsequent years of any program. Our sister faculty (Arts) has decided to abandon all first year requirements. We have begun to explore opening up the first year to greater free choice but as yet have not come to any definite conclusions. Our problem has always centered about the requirements of mathematics, a core subject in any science degree, and how much time should be allotted to it in relation to other disciplines.

And lastly the Faculty has in its sessions discussed the adoption and implementation of the new form of University Government referred to in the President's Report of last year, pp. 6-8. Beginning at the departmental level student representatives have taken their places in our councils with the most happy results. They are now serving on the Faculty Council, its committees and are among our representatives to Senate.

Because of the discussions referred to above, new programs in Science were initiated this year. Our graduate programs, however, continued to expand as more and more students wished to study with our instructors and associate themselves with their research projects. Five students were granted their doctor's degree, 21 their master's and at the undergraduate level, 41 students were admitted to the honours degree and 99 to the pass degree.

As in the past thanks are due to the National Research Council and the Department of University Affairs for their support of our research programs. Most of these are conducted in our own laboratories with the exception of the work done by Professors E. P. Hincks F.R.S.C., D. Kessler, and their associates at the Argonne

National Laboratory outside Chicago and at the synchrocyclotron at the University of Chicago. (Such cooperative work is necessary because there are no high energy accelerators in Canada.)

Turning to the problem of the staff, the most significant development during the past year was the establishment by an anonymous donor of a Professorship in Systematic Zoology, to which Dr. Henry Howden of the Entomological Research Institute of the Canadian Department of Agriculture was appointed.

Dr. A. F. Gregory of the Department of Geology has resigned. In commenting on resignations, the Faculty of Science wishes to express its appreciation of Dr. Rosenberg, who, as Chairman of the Department of Mathematics, has guided its affairs for the past two years.

The members of the Faculty and the whole University were saddened last August by the death of Dr. Amal Ghosh and his wife in an automobile accident. A valued teacher and member of the High School Liaison Committee, Dr. Ghosh had been a member of the Physics Department since 1951.

In addition to the more formal instruction given within the University, and the presentation of papers and seminars to learned societies, the members of the Faculty have spoken to High School groups and professional societies in the Ottawa area. Last winter the Department of Geology sponsored a series of public lectures entitled "Geology and Man — The Earth in Our Lives". Taking part in this series were: Dr. R. S. Dietz, Dr. R. M. Quigley, and Dr. K. C. Dunham.

Because of our close proximity to the national laboratory we have had many distinguished visitors during the past year who have given seminars or met with our faculty and students. From outside Canada the following have visited us:

Professor Paul Erdos, University of Budapest, Hungary

Dr. J. Ferraro, Argonne National Laboratory,
Chicago, Illinois, U.S.A.

Professor K. O. Friedrichs, New York University, U.S.A.

Dr. A. W. Hager, Wesleyan University, Connecticut, U.S.A.

Dr. R. van Hardeveld, Staatsmijnen, Gleen, the Netherlands

Dr. F. Hartog, Staatsmijnen, Gleen, the Netherlands

Dr. I. Hirschman, Duke University, Durham and Washington
University, St. Louis, Missouri, U.S.A.

Dr. M. Holub, Czechoslovakian Academy of Science

Dr. B. Huppert, University of Illinois, Chicago, U.S.A.

Professor Sho Ito, Department of Chemistry, Tohoku University,
Sendai, Japan

Dr. A. J. Keage, Jr., Department of Chemistry, Illinois Institute
of Technology, Chicago, Illinois, U.S.A.

Dr. H. Luneburg, University of Illinois at Chicago, U.S.A.

Professor Egon Matijevic, Institute of Colloid and Surface
Science, Clarkson College of Technology, Potsdam, New
York, U.S.A.

Professor Conway Pierce, Department of Chemistry,
University of California, Riverside, California, U.S.A.

Dr. A. J. Poe, Department of Chemistry, State University of
New York at Buffalo, U.S.A.

Dr. B. Schwarz, Carnegie-Mellon University, Pittsburg,
Pennsylvania, U.S.A.

Dr. M. Suzuki, Princeton University and University of Illinois,
U.S.A.

Dr. Louis Voyvodic of the Argonne National Laboratory,
Illinois, U.S.A.

Professor R. L. Wain, C.B.E., F.R.S., Wye College, University
of London, England

Dr. J. D. Winefordner, University of Florida, Gainesville,
Florida, U.S.A.

Dr. H. Wroblowa, Electrochemistry Laboratory, University of
Pennsylvania, U.S.A.

H. H. J. NESBITT,
Dean, Faculty of Science

Faculty of Engineering

In the annual report for 1967-68 it was noted that the Faculty of Engineering had been organized into a number of divisions for the 1968-69 academic year. It is deemed appropriate, therefore, to focus the full attention of this report to a description of the divisional activities — with particular emphasis on areas of investigation and research.

Division of Circuits, Electromagnetics, Electron Devices and Materials: An important step was taken early in the 1968-69 session in defining a single major activity within the very broad scope of the division. It was decided that this major activity would be Solid State Electronics, a field in which it was felt there was promise of making a unique contribution in Canada. Particularly strong justification for this choice is to be found in the geographical location of Carleton University in Ottawa, with its concentration of industrial and research effort in Solid State Electronics at the Northern Electric Company and in the laboratories of the Communications Research Center, and with corresponding opportunities for co-operative ventures.

The object of the major graduate program of the division is to advance solid state device technology in the areas of both device development and application. The program includes: basic semiconductor device research, fabrication processes, modelling of device structures, and device applications in discrete and integrated electronics. Modelling is a central theme and is concerned with the relationships between fabrication processes, internal device mechanisms and circuit performance, with particular interest in the application of computer-aided design methods.

Essential to the graduate program in Solid State Electronics are device fabrication facilities. Plans were made early in the year to set up extensive fabrication facilities which will enable the main processes of silicon planar technology to be carried out on a research scale. The resulting laboratory will be equipped to enable photo-

lithography, evaporation, solid-state diffusion and other processes to be carried out under high-grade clean conditions, and is expected to come into operation by late summer 1969. In the meantime, graduate and undergraduate project work has been pursued using temporary and improvised facilities for fabrication, and much useful process development work has been accomplished. This has been made possible by a most generous long-term loan of evaporation, bonding, probing and other facilities by Computing Devices of Canada, to a total equipment value of some \$45,000, and by smaller loans from the Northern Electric Company.

A significant effort has been directed towards the reorganization and extension of the courses offered by the division, with the combined objects of setting up a course structure of adequate scope and of integrating the topics within the division in the areas of Solid State Electronics, Circuit Theory, Electromagnetics, Plasmas and Materials. A number of courses have been modified and three new courses are to be offered in 1969-70.

Graduate research activities have been pursued in a number of areas, mainly associated with the developing Solid State laboratory, the Plasma laboratory and the Electron Beam laboratory — the last now in full operation after a four-year development. The main topics of research are as follows:

Semiconductor devices (Professors Boothroyd, Copeland and Knight): physical modelling of bipolar transistors and computer-aided design of device structures; determination of physical parameters of simulated-gate field-effect transistors; basic studies in MOS structures; switching models of power transistors. Plasma anodization of aluminum and silicon.

Magnetics (Professor Copeland): optimization of the hysteresis machine; study of static and dynamic forces on magnetic reeds.

Plasmas and Electromagnetics (Professors Cormack and Makios): evaporation of electrodes by high current spark discharges; study of electro-fluid-dynamic devices, notably of a fan with no moving parts and of an EFD power generator; measurement of the electron drift velocity in the plasma of a positive column using microwave interferometric techniques.

Electron beam technology (Professors Goldak and Bibby): scanning X-ray radiography — the feasibility of

radiography with patient doses as low as 3 microrads has been demonstrated; electron beam welding of rails for railways; an electron beam melting process aimed at increasing the yield of a Canadian Zirconium plant.

The Division of Computing, Communications, Control and Power Systems has been concerned with both undergraduate and graduate course program development this year. Proposals regarding the creation of a limited undergraduate program in Computing Science courses has been accepted by the University Senate. This program will be instituted in the coming year under the leadership of Professor Gullen. At the graduate level the courses in both Communication and Control have been re-organized and extended in the light of the dynamic changes taking place in these disciplines and of our greater resources. A distinctive feature of these two course programs, as offered at Carleton, is their extensive common core. It is significant to note that the area of common interest is growing.

At Spring Convocation, Mr. Spencer Tracy Nichols was admitted to the Ph.D. degree in Communications and received the third doctorate degree awarded by Carleton in this area of study. Six other doctoral students completed their first year of study in this field, as did the first full-time doctoral student in Controls.

Our cooperative activities with local institutions have continued and grown during this past year. The most active arrangement exists with the Communications Research Centre where Professor George has just spent a sabbatical year. Work on communication channel equalization is the major region of this collaboration. Cooperative research with the Ottawa Civic Hospital has grown and is being formalized by a Biomedical Engineering Research and Development agreement between the Faculty and the Hospital. Particular problems in control and instrumentation are the current areas of biomedical research activity. In addition, preliminary efforts are underway to develop cooperative activity in systems analysis and operations research, and to extend cooperative research in Communications to a second organization. The Division is also cooperating with the Department of Psychology in automating the collection of research data.

The particular research emphasis of the Division is the application of modern systems theory to real engineering problems and, where required, the development of appropriate new theory. Our activities in automatic communication channel equalization over the past few years have been a most satisfying example of this policy. The linear

transversal equalizer first arose as a theoretical optimal system; it was adapted to be physically practical; a prototype was built and tested; this system was made self-adjusting; the performance of a number of such adaptive equalizers were compared; an improved theory was developed which allowed a growing number of possibilities to be compared; a particular nonlinear system was found to be a most practical sub-optimum equalizer; an adaptive vision of this was developed and current tests indicate marked improvement over other adaptive systems. This work has resulted in many theses and is a contribution to a field of rapidly growing industrial importance.

Other research has also reached fruition this year. The determination of a large class of realizable optimal communication systems by means of state space techniques has now reached the stage where application to particular problems will receive major emphasis. Practical application of the conjugate gradient optimization technique to actual physical processes has been achieved. A continuing study of the use of a small computer for "Fast Fourier Transformations" is yielding results. Automatic in vivo control of glucose levels has been demonstrated and several electronic instruments for medical use have been designed.

Professors Pagurek and Riordon presented papers at the Fourth Congress of the International Federation of Automatic Control in Warsaw, and a paper presented by Professor Coll and by M. J. Cowpland, a former M.Eng. student, at the Symposium on Signal Processing and Communications at the Polytechnic Institute of Brooklyn, was previewed at length by an important journal.

Within the *Division of Fluid Mechanics, Heat Transfer and Thermodynamics* research programs are being pursued in all three general fields — but the individual studies are all related to two main topics: the fluid mechanics of aircraft, particularly STOL aircraft; and the fluid mechanics, thermodynamics and heat transfer aspects of propulsion systems, particularly gas turbine power plants and their components. In both areas, the proximity of NRC and NAE research facilities and staff is of major importance in keeping the work relevant to Canadian problems. Some of the individual studies within these areas are described briefly below:

Aircraft Fluid Mechanics (Professors Kind, Ruptash, and Vrana): the stability of wall- and free-jets, especially when used to energize a boundary layer in an adverse pressure gradient, is being studied using wind tunnels and other

specially designed test rigs. The effect of wall curvature is also being examined to simulate the flow over high-lift devices such as flaps. To enlarge the scale and range of these studies, a 20-inch by 30-inch wind tunnel is under construction and will be operational in the summer of 1969. A related study of three dimensional boundary layer separation and control by wall-jet blowing, in a supersonic stream, is being carried out using the NAE 5-inch by 5-inch supersonic tunnel. The use of the cross-flow fan as a possible source of a wall-jet is being studied in a preliminary way.

Propulsion Systems (Professors Biggs, Millar, Plett and Vrana and Mr. Davis): the flow in turbomachinery is the main object of study and is being approached both analytically and experimentally. The analytical studies, using the GE 415 computer at Carleton, and the 360/50 computer at NRC, are aimed at developing a set of computer programs for the aerodynamic analysis and design of compressors, turbines and inter-stage ducting. To evaluate the effectiveness of these analytical studies a 16-inch diameter tunnel is being constructed which will enable studies of the swirling flow in annuli of various configurations and a comparison with the analytically predicted flow patterns.

The flow and pressure induced by a disk rotating in a partial enclosure, similar to a cooled turbine disk, is being measured over a wide range of flows and speeds on a special test stand. Two novel turbomachines are being examined in a preliminary way to define future research programs. One of these is the cross-flow fan, which promises to be an effective source of a jet for boundary layer control; it also is promising as a quiet blower for air conditioning systems. The other is the Terry turbine, redesigned to improve its efficiency, and "unwrapped" to produce a linear motor suitable for high speed train propulsion. A computer simulator of a complex gas turbine power plant, particularly the type proposed for ship drives, has been partially developed as part of a study on vehicle dynamic response. The use of efficient methods for simulating component performance is expected to make the program more compact and efficient than those available commercially.

Heat transfer effects in high speed flows is the main object of study in the shock-tube laboratory. The correla-

tion between experimentally observed heat transfer rates and those predicted analytically is poor, and instrumentation to measure transient temperatures, pressures and heat transfer-rates, behind detonation and shock waves has been developed. More realistic analytical models are being developed and studied in an attempt to improve the correlation with experimental results. The heat transfer to turbine blades, protected from a hot gas stream by a wall-jet of cooler air, will be studied on completion of a special test rig. Analytical work is being carried out, and the wall-jet studies will provide valuable data for this analytical phase of the work.

Division of Solid Mechanics, Structural and Mechanical Analysis and Design: The current graduate program in Structural Analysis and Design is being developed to include theory of structures, computer applications in structural analysis and design, the behaviour and design of reinforced concrete structures, and the behaviour and design of steel structures. The main areas of advanced study are reinforced concrete and steel structures for buildings and it is expected that our work will provide substantial support to the future development of the interests within the School of Architecture. Professor Manuel has initiated studies on the ultimate load behaviour of reinforced concrete deep beams. This subject is of considerable practical importance in modern high rise apartment construction where the structural resistance against wind or earthquake forces often consists of a series of vertical cantilevered deep beams or shear walls extending the full height of the building. Professor Suter is investigating the fatigue strength of reinforced concrete beams with the long range objective of working toward a rational analysis of the fatigue problem in reinforced concrete members. He presented a paper on the behaviour of reinforced concrete beams under repeated loading at an international conference on reinforced concrete held in India in January. Professor Wright is continuing his research on the inelastic behaviour of steel rigid frames for high rise buildings and on the computerized analysis and design of building frames. The long term objective of his work is improved economy in the construction of frames for high rise buildings. He is also working on a design and construction system which is expected to reduce the costs of large span concrete shell roofs. On a long range basis, the main efforts will be directed to computer applications in the analysis and design of

building structures, design optimization, and the theoretical and experimental behaviour of inelastic structures.

Research in solid mechanics is carried out using both theoretical and experimental methods — with emphasis on the finite element method of theoretical analysis and photoelasticity as an experimental tool. Topics under study include non-linear shell behaviour, the buckling of cylindrical shells, stress analysis of high speed turbo-machinery rotors, and the response of plate grillages to impulsive loadings. Professor Bigg's studies include the area of non-linear shell behaviour, using both theoretical methods and photoelasticity, and the response of plate grillages to impulsive loading. He is also investigating the stress analysis of high speed turbo-machinery rotors. Professor Janzen is studying the buckling behaviour of cylindrical shells.

Research has been initiated in the area of dynamic soil-vehicle interaction in off-highway transportation, and on turbo-machinery dynamics with particular emphasis on turbine blading. Professor Kirkhope established the groundwork for research studies to obtain improved design methods for the blades of compact gas turbines. Professor Wong is conducting preliminary studies in the area of dynamic soil-vehicle interaction in off-highway transportation. He has also started a research program on the use of vibration as a means of improving the performance of earth-cutting machinery.

The *Soil Mechanics, Foundations, and Transportation Group* has been concerned with the vastness of the field together with an examination of the possible areas that may be appropriate for development at Carleton. The studies of Professor Fletcher in the mechanics of soil systems subjected to dynamic loadings has application to the design of foundations both in the ordinary cases as well as in the special case of earthquake loadings. The dynamic loadings applied to soil systems by off-road vehicles under investigation by Professor Wong will, hopefully, ease the transportation problems of Canada's mineral and forest industries. The current studies by Professor Kasianchuk include the design of airfield pavements.

In my first submission, for the 1959-60 report, I recorded — in part — as follows: "The faculty members have shown an excellent sense of responsibility toward the development of courses and laboratory facilities. I am very pleased with our progress and take this opportunity to extend my appreciation to my colleagues for their very significant contributions of the past year." Today, after an additional nine years of tenure, I find it particularly gratifying to record

that I have been very pleased with our progress throughout the ten year period, and to extend my deepest appreciation to the members of the faculty, the technical and secretarial staff, the engineering students and the President for their devotion, cooperation and most significant contributions. Without their dedication to our objectives set forth from year-to-year, our development during the past ten years — which has been both very substantial and vigorous — would have been quite impossible.

JOHN RUPTASH,
Dean, Faculty of Engineering

School of Architecture

Architectural studies commenced at Carleton University in September, 1968, when the first year of a five-year program leading to the Bachelor of Architecture degree was opened. An additional year of the program will be offered each succeeding year and the complete program will be available in the 1972-73 session. The first students will graduate in June, 1973.

The first-year program offered during the 1968-69 session was an interim one to enable the first class of thirty-five students to start on the degree program, and to give the faculty time to work on curriculum development. The new program will begin in September 1969, and the initial class will make the transition to it during the second year. The overall structure of the program has been approved by the Senate of the University and the detailed curriculum is now under intensive development. Organization and staffing are proceeding to pace the planned expansion of the program.

To ensure the smooth transition of the students into the profession of architecture, an Advisory Council has been formed composed of outside architects, educators, and a representative of the Ontario Association of Architects. This Council advises the Director and the President on all matters affecting the growth and development of the School. In addition, the Director of the School is a member of the Education Committee of the Ontario Association of Architects.

The School of Architecture is housed temporarily in the 1968 addition to the C. J. Mackenzie Building for Engineering where it has excellent facilities for its program during the initial phase of its development. A building for the School is in the planning stages, and it is expected that the first phase of construction will proceed in time to facilitate the expected growth in enrolment.

DOUGLAS SHADBOLT,
Director, School of Architecture

Faculty of Graduate Studies

REPORT OF THE DEAN

The enrolment in graduate studies continued to increase, as shown in the table on page 47. There were 34 students holding University Teaching Fellowships, and 18 post-doctoral fellows, as detailed on pages 47-49.

There were altogether 22 Diplomas, 171 Master's degrees and 10 Doctorates awarded in 1968-69. Among the Doctorates were the first awarded in Psychology and in Mechanical Engineering. (In 1967-68 the first Master's degrees were awarded in Spanish and in Materials Engineering, and the first Doctorates in Chemistry and in Aeronautical Engineering).

The second new program submitted to the Appraisals Committee of the Ontario Council of Graduate Studies, a Ph.D. program in Sociology, received the approval of the Committee in May, 1969. It will come into operation in September, 1969, along with the new Ph.D. program in Economics which had been approved earlier.

In 1967-68 a Committee on Graduate Studies Development had been set up to survey faculty opinion and prepare a report identifying the most urgent needs. The report appeared in the spring of 1969, and contains a great deal of information on the views of the faculty on various topics, together with a number of specific recommendations. The committee was reconstituted as a standing committee of the faculty, and will continue to advise on the development of new programs and the relation of the graduate faculty to other parts of the university.

As the New University Government came into effect, the faculty welcomed the student representatives, and was pleased to have them taking part in the meetings.

The faculty has kept up a steady review of the rules governing graduate work, and has recently moved towards more exacting standards by requiring the withdrawal of students in certain cases where

formerly they might have been allowed to remain and attempt to raise their standing to the required level.

As retiring dean, I would like to add a personal word of thanks to the faculty members for their unfailing support, and especially to Dr. English for serving as acting dean, 1967-68. I also would like to take this opportunity to wish every success to the newly appointed dean, Dr. Ruptash.

M. S. MACPHAIL,
Dean, Faculty of Graduate Studies

SCHOOL OF PUBLIC ADMINISTRATION

Enrolment in the regular academic programs of the School of Public Administration totalled 356, comprised of 84 full-time and 272 part-time students. In the M.A. program there were 21 full-time and 57 part-time students; in the Graduate Diploma program 27 full-time and 113 part-time students; in the Certificate in Public Service Studies program 5 full-time and 66 part-time, with an additional 35 students taking qualifying courses for the program. In addition, there were 8 students in the Honours B.A. program, and 24 in the special course in Public Administration for overseas students.

During the year there were 66 graduates — 20 received the M.A. degree; 22 were awarded the Graduate Diploma; 22 were awarded the Certificate in Public Service Studies; and 2 received the Honours B.A. degree in Public Administration.

The School of Public Administration suffered a great loss in August, 1968, in the death of Professor A. M. Willms. We wish to thank Mr. David Watters, Professor V. S. Wilson, Mr. M. Whittington and Mr. W. A. Matheson for their help and cooperation in taking on extra duties to fill the void created by Professor Willms' sudden death.

The Special Course in Administration for Overseas Public Servants, sponsored by the Canadian International Development Agency, had 24 students from 13 developing countries, all of whom qualified for a Certificate showing satisfactory completion. The course was coordinated by Mr. W. A. Matheson. Mr. David Watters and Mr. M. Whittington instructed the class in Public Administration, and Professor Brewis and Mrs. S. Isaac of the Department of Economics presented a special course in Economics. The class took Political Science 100 under Professor Dalfen, and Mr. Matheson led dis-

cussion groups. Mr. James Benning assisted with the course.

The Senior Officers Course for Overseas Public Servants, also sponsored by the Canadian International Development Agency in the summer had 25 participants from 18 countries. Mr. Matheson is coordinating this course also. It will consist of twelve weeks of training—special lectures by university professors, seminars led by senior public servants, case studies in various administrative fields, and visits to federal government departments, provincial governments and other sites considered to be of interest and benefit to this group. The School of Public Administration is grateful to the members of the university staff and to the many prominent Canadian public servants for their help and cooperation in making this course a success each year.

R. O. MACFARLANE,

Director, School of Public Administration

INSTITUTE OF CANADIAN STUDIES

Twenty-one students were admitted to the M.A. program in the fall of 1968, 15 full-time (including four in their qualifying year) and six part-time. As in previous years, the students took a variety of courses in a number of disciplines, depending upon their particular interests. No student took courses in fewer than two disciplines, most students took courses in three, a few in four. In addition, many of the students took the special interdisciplinary seminar conducted this year by Professor Gilles Paquet of the Department of Economics and Professor Joseph Scanlon of the School of Journalism. The subject of the seminar was "Communications".

As in previous years, each final year M.A. student also undertook a substantial piece of research of an interdisciplinary nature upon which he was examined orally by a board drawn from faculty in the disciplines concerned. The subject matter of this research covered a wide and fascinating range, including such topics as Canadian attitudes towards the Spanish Civil War, Quebec-Paris-Ottawa relationships, a new approach to the Group of Seven and some aspects of the development of political perception in Canadian children.

From the body of full-time students admitted in the fall of 1968, as well as from the body of part-time students already in course, seven were awarded their M.A. degrees at the spring convocation. Another nine are expected to convocate in the fall of 1969.

Several intend to go for their Ph.D.'s, others plan to teach, others to go into journalism and other fields.

In this connection, it is interesting to examine the subsequent career patterns of Institute graduates. Such an examination shows that about two-fifths go on to Ph.D. work, about one-fifth go directly into teaching (the Colleges of Applied Arts and Technology are becoming increasingly popular with them), about one-fifth enter government service (external affairs, the archives, etc.) and about one-fifth get jobs in the media (newspaper work, the C.B.C., public relations, and so on). Those going on to Ph.D. work, by the way, report that their interdisciplinary M.A. has not "hurt" them when returning to their disciplines — i.e., they have not had to "make up" courses. And from their own point of view, it has been of positive and enriching value.

Two new departments have been added to the M.A. program of the Institute this year — Law and Music — now making a total of eleven: Art, Economics, English, French, Geography, History, Journalism, Law, Music, Political Science, and Sociology and Anthropology.

It was also decided this year that in addition to our Visiting Fellow program, the Institute should have a Visiting Professor each year (probably sharing him with one or more departments represented in the Institute) whose chief responsibility would be to assist in the interdisciplinary seminar. It is with great pleasure that we announce the appointment of Professor Hubert Guindon, formerly of Sir George Williams University, to be our first Visiting Professor for the 1969-70 academic year. We will share Professor Guindon with the Department of Sociology and Anthropology.

The Visiting Fellow program will, of course, continue. Our Visiting Fellow this year was Mr. Harry J. Boyle, Vice-Chairman of the Canadian Radio-Television Commission. Next year we will welcome Professor Edward J. Miles, Director of the Canadian Studies Program, at the University of Vermont. Professor Miles will be spending his sabbatical year with us. We hope, also, to have other Visiting Fellows, for shorter periods of time, during the 1969-70 academic year.

PAULINE JEWETT,
Director, Institute of Canadian Studies

This was a year of transition for the School of International Affairs. During the preceding year, the late Professor Norman Robertson, first Director of the School, had decided to give up his administrative responsibilities. He was succeeded by Dr. H. Edward English, Professor of Economics and formerly Director of the School of Commerce. Professor John Nellis, of the Department of Political Science, became Assistant Director of the School.

In 1968-69 there were 40 full-time students, of whom 22 were in their Master's year and 18 in a Qualifying year. In addition, there were about 18 part-time and special students. These figures represent a substantial increase in enrolment over previous years. In keeping with the School's subject matter, students in the School came from (besides Canada) Australia, the United States, Rhodesia, Guyana, the United Kingdom, Thailand, and Malaysia. The M.A. degree was awarded to five students in the Fall Convocation and to one in the Spring.

For the second consecutive year, the core of the teaching program of the School — the interdisciplinary seminars — focused on the issues of economic and political integration (with emphasis on integration in Western Europe) and economic and political development. Each seminar was guided on a regular basis by an economist and a political scientist, with frequent participation by faculty members from such related disciplines as sociology and geography.

A Chair of Strategic Studies, supported by a grant from the Department of National Defence, was established at Carleton in 1968. The first co-holders of the Chair were the Honourable Alastair Buchan and General Charles Foulkes. They conducted seminars on the role of force and warfare in modern society, and on Canadian strategy and defence policies.

Dr. Carsten Holbraad held the postdoctoral fellowship (sponsored jointly by the Canadian Institute of International Affairs and the School of International Affairs) through 1968 and departed for the Australian National University at Canberra in January of 1969. A new postdoctoral fellow, Dr. Michael Morris, was appointed and will take up residence at Carleton in the summer of 1969 and begin a study on western hemisphere security problems.

A series of Occasional Papers was initiated by the School. The first titles in this series were as follows:

1. *The United States in a Troubled World*, by Alastair Buchan;

2. *Canadian Response to United States Strategy*, by Charles Foulkes;
3. *Lessons of Czechoslovakia*, by Adam Bromke, John C. Campbell, and Alastair Buchan.

It is anticipated that the series will make available, on a pre-publication basis, not only faculty research but also selected papers of students of the School.

During the course of the year, plans were underway for additional research appointments to the School, particularly on studies of developing countries, and a research program in this area is being prepared.

During 1968-69, the School brought to Carleton a number of distinguished visitors and lecturers. In addition to the Honourable Alastair Buchan, Director of the Institute for Strategic Studies in London, other visitors included Franz Alting von Gesean, Director of the John F. Kennedy Institute in the Netherlands, and Dr. Carl Widstrand, Head of the Scandinavian Institute of African Studies at Uppsala, Sweden; and Professor Uwe Kitzinger, of Nuffield College, Oxford, visited Carleton in April and participated in the lecture and seminar program.

For the fourth consecutive year, the School of International Affairs, in cooperation with the Canadian Institute of International Affairs, sponsored a year-end Conference on an issue of international consequence. The December, 1968, Conference focused on the topic of "The United States and the World: A Time of Troubles," and was highlighted by two public lectures on the title theme given by Mr. Buchan. The conference was attended by over seventy academics, government officials, Members of Parliament, and visitors from the United States and Europe.

Throughout the year students for the first time played an active role as members of the Committee of Management, and there were extensive and fruitful discussions on the expansion and improvement of the curriculum.

H. E. ENGLISH,
Director, School of International Affairs

SCHOOL OF SOCIAL WORK

Enrolment in the School of Social Work increased to 95 students of whom 90 were full-time. Of the full-time students, 38 were in Year II of the program; 46 were male, 44 female; eight of the Canadian

provinces were represented in the group. Once again the School had an outstanding record with respect to the number of holders of National Welfare Scholarships enrolled, 11 out of a total of 39 awarded across the country. This, in a very concrete way, demonstrates the high academic standing in their undergraduate work of those who enrol at Carleton, one of the smaller of the 10 Canadian schools of social work. Carleton's eleven "national scholars" was the highest number in any Canadian university, and may be compared with 10 at the University of Toronto.

Among the five part-time students, one was enrolled full-time in the School of Public Administration, with certain courses offered in the School of Social Work being considered as meeting part of the requirements for the M.A. (Public Administration). The School was most pleased at this initiatory opportunity of participating and collaborating with another school of the University.

The Social Service Centre of the School opened in October with four students receiving practice instruction in it, as part of the regular degree program. The Centre is being funded for a four-year period under a project grant from the Department of National Health and Welfare. The School also established "Practice Units" in both Toronto and Ottawa, in which groups of 8 students received practice instruction from a university-employed instructor attached to the Children's Aid Societies.

Beginning exploration was undertaken during the year of the feasibility of instituting degree programs at the post-Master's level, and also of offering two-week summer institutes to meet "continuing education" needs. It was established that there is an evident need and demand for such programs, but a major obstacle will be the present space limitations in the School, and the relative isolation from cognate disciplines on the Rideau River Campus.

Student involvement in school planning, with student members on all curriculum committees, on the Faculty Council, and on a Joint Student-Faculty Committee to deal with areas of mutual concern not covered through existing channels proved to be a most constructive development. A one-day conference on "The Use of Audio-Visual Techniques in Social Work Education", conducted by Professor Oswald of the University of California (Berkeley), was a stimulating experience for both faculty and students.

SWITHUN BOWERS,
Director, School of Social Work

GRADUATE ENROLMENT DAY AND EVENING DIVISION—1968-69

	Day	Evening	Total
D.P.A.	27	113	140
M.A.	275	149	424
M.SC.	54	12	66
M.SOC.WORK	90	—	90
M.ENG.	58	71	129
PH.D.	87	28	115
Special*	24	—	24
Total	615	363	978
Total (1967-68)	486	303	789

*Colombo Plan Students

CARLETON FELLOWSHIP HOLDERS 1968-69

Allan William Ashbrook, B.SC. (Carleton)	Chemistry
James Arthur Bailey, B.A. (Carleton)	French
Alexandra A. T. Barrat, B.A. HONS. (Cambridge)	English
Gillian Beavin, B.SC. (Sheffield University)	Biology
Satish Kumar Bhan, B.SC. (Panjab)	Engineering
Klaus Brasch, B.SC. (Sir George Williams)	Biology
Daylor Chester Brown, B.A. (R.M.C.)	History
Nguyen Ahn Cao, B.A.SC. (Ottawa University)	Engineering
Terrance G. Carroll, B.A. (Manitoba)	Political Science
Katherine J. Carruthers, B.A. (Minnesota)	Spanish
Cho-Yam Chu, B.SC. HONS. (New Asia College, Hong Kong)	Biology
Derek S. Cotterill, B.SC. HONS. (Carleton)	Mathematics
Ajay Sankar Dass, M.SC. (Calcutta)	Geology
Gerald Doucet, B.A. (Ottawa University)	Economics
Melvyn Green, B.A. (Carleton)	Sociology
Mary Ellen Greer, B.A. (Carleton)	Psychology
Susan Hendry, B.A. (Carleton)	Spanish
Edward W. Hermann, M.SC. (Toronto)	Chemistry
Satyavan Iyengar, B.TECH. (Indian Inst. Technology)	Engineering
Mary Josephine Kinzel, B.A. (Saskatchewan)	Sociology
Burton Leathers, B.A. (Carleton)	Sociology
John Blair MacKenzie, B.A. (Bishop's)	Canadian Studies
Jeewan Narain Mathur, B.ENG., M.ENG. (Birla Inst. of Technology)	Engineering
William John McMillan, B.A.SC., M.A.SC. (U.B.C.)	Geology
George Mori, B.A. (Toronto)	Sociology
Alan Morrison, B.A. HONS. (University of Kent)	Sociology
John C. Patton, B.A. (Queen's)	International Affairs
Patricia Pond, B.A. (New Brunswick)	International Affairs

Sally Sellick, B.A. (Oxford)	English
Dirk Smit, B.A. (Alberta)	History
S. Chakravarthy Srinivasan, M.SC. (Bombay)	Chemistry
Bernard McCarthy Wood, B.A. (Loyola)	International Affairs
Gurbachan Singh Viji, B.SC.(ENG.), M.SC.(ENG.) (Panjab)	Engineering
Peter Yurkiw, B.A. (York)	History

POST-DOCTORAL FELLOWS

Biology

- Allaway, Anne, B.A. Cambridge, U.K., PH.D. Leeds, U.K. — National Research Council — A histochemical study of the secretion of hydrolytic enzymes by young lateral roots is being made in order to determine to what extent enzyme digestion is involved in the passage of the lateral root through the cortex of the main root.
- Allaway, William, B.A. Cambridge, U.K., PH.D. Lancaster, U.K. — National Research Council — Electron microscope and light microscope studies of stomatal guard-cells.
- Erez, Omnon, B.SC., M.SC., PH.D. Faculty of Agriculture, Hebrew University, Jerusalem, Israel — Carleton University and National Research Council — Examination of the influence of various environmental conditions on enzymes involved in auxin biosynthesis.
- Pahlich, Edwin, B.A., M.SC., PH.D. Justus Liebig University, Giessen, Germany — National Research Council — Isolation and characterization of glutamate-dehydrogenase from pea roots.
- Palchaudri, S.R., B.SC. HONS., M.SC., PH.D. Calcutta University, India — National Research Council — DNA synthesis and its regulation.
- Schneider, Elnora Anne, B.SC. St. Andrews, M.S. Rutgers, PH.D. Carleton — Canadian Department of Agriculture — Biochemical and electron microscopic study of cell wall growth in storage tissues of plants.
- Sinha, R. P., B.SC. (AGR.) Bihar University, Bihar, India, M.S. University of Laramie, U.S.A., PH.D. University of Manitoba, Winnipeg — National Research Council — Molecular mechanisms of recombination.

Chemistry

- Giordano, Maria Christina, PH.D. Universidad Nacional de Cordoba — National Research Council — Thermodynamics of the Double Layer of Inorganic Electrolytes; Electrochemical Oxidation Reactions of Organic Compounds; Theoretical work on Halogenic Species in Non-Aqueous Systems.
- Hooper, John, B.SC. Brunel University, PH.D. University of London — National Research Council — Synthesis of Triterpenes.
- Joris, Serge J., Licencié en Sciences Chimiques, University of Louvain, PH.D. University of Louvain — National Research Council — Study of the stability of the dialkyl and monoalkyl dithiocarbamates: Genetics of decomposition, possible pathways for decomposition (CS_2 and H_2S mechanisms), solvent effects and ionic strength dependence of the rates of decomposition, and acidic character of the acid.

- Khorana, Shamsher, B.SC. St. Stephens College, PH.D. Bombay University — National Research Council — Radiation and Recoil Effects in Solids.
- Sastri, Vedula Sankar, B.SC., M.A. Sri Venkateswara University, PH.D. State University of New York — National Research Council — Photochemistry of Transition Metal Complexes.
- Schaak, Gerhard, Diplom-Physiker, DR. RER. NAT. Dozent, Technische Hochschule Darmstadt — National Research Council — Absorption- and reflection-spectra at low temperatures; Phonontransitions and stimulated Raman scattering.
- Subbarao, Saligrama Channappaiah, B.SC. Mysore University, Bombay University, PH.D. London University — National Research Council — Mechanistic studies of Lysozyme Catalysis; Proton tunneling in D.N.A.
- Tsiang, Hon Gee, D.PHIL. University of Southern California — National Research Council — Kinetics and Mechanisms of Formation $\text{Co}(\text{MNT})_2$ complexes with Pyridine, Triphenylphosphine, Triphenylarsine, and 11, 10-Phenanthroline; Raman Spectra of MnSO_4 , and $\text{Ni}(\text{NO}_3)_2$ in DMSO.

Mathematics

- Loy, Richard James, B.SC. HONS. University of Melbourne, M.SC. Monash University, PH.D. Monash University — Carleton University Fellowship — Attempting to find the structure theory for Banach algebras of power series.
- Manickam, S., B.SC., M.SC. Madras, PH.D. Toronto — National Research Council — Attempting research into shock structure of imploding shock waves.

Physics

- Gunson, James R., B.A. Oxford, PH.D. Elementary Particle Physics Theory, Durham, England — Doctoral thesis "The Dynamical Generation of Symmetries". Currently interested in algebraic models derived from strong interaction sum rules, and their realizations. National Research Council.

THESES COMPLETED AND POST-GRADUATE DEGREES AWARDED
NOVEMBER, 1968, AND MAY, 1969

Doctor of Philosophy

BIOLOGY

- Cohen, Daniel, B.AGR. SCI. Massey Univ. of Manuwatu, M.SC. Adelaide — "Intermediary Steps in the Enzymatic Conversion of Tryptophan to IAA in Cell Free Systems from Higher Plants".

CHEMISTRY

- Demayo, Adrian, Degree of Engineer, Polytechnical Inst. of Bucharest — "An Experimental and Theoretical Study of the Secondary Deuterium Isotope Effects on the Ionization in the Benzoic, o-Toluic, Mesitoic, and Phenylacetic Acid Systems".
- Krehm, Harold, B.A., M.A. Toronto — "Some Transformations in the Pimaric and Sandaracopimaric Acid Series".

ENGINEERING

- Nichols, Spencer Tracy, B.SC.(ENG.), M.SC.(ENG.) Alberta — "On Linear

and Non-Linear Smoothing Problems with Applications to Communications Systems”.

Sharah, Abul, B.ENG. Karachi, M.SC. Tokyo — “Electrode Ablation in a Spark Discharge and in an Electromagnetic Shock Tube”.

Uddin, Wahhaj, B.SC. (MECH. ENG.) East Pakistan, M.ENG. Carleton — “Linear and Non-Linear Analyses of Composite Shells of Revolution”.

GEOLOGY

Hounslow, Arthur William, B.SC. Melbourne, M.SC. Carleton — “Crystal Structures of Two Naturally Occurring Chlorapatites”.

Potter, Ralph Richard, B.SC. Acadia, M.SC. New Brunswick — “The Geology of the Burnt Hills Area and Ore Controls of the Burnt Hill Tungsten Deposit”.

PSYCHOLOGY

Corbet, Hildegard, B.A., M.A. Carleton — “Two Effects of Verbal Stimulus Familiarization on an Associative Test Task in Children”.

Pimm, June Barbara, B.A., M.P.S.C. McGill — “Children’s Motor Skill and the Partial Reinforcement Acquisition Effect”.

Master of Arts

CANADIAN STUDIES

Benoit, Paul, B.A. Montreal, D.P.A. Carleton — Degree by Course Work

Brown, Jacqueline Larkin, B.A. Carleton — Degree by Course Work

Carroll, Michael, B.A. St. Patrick’s College — Degree by Course Work

Davidson, Margaret, B.A. Toronto — “The Group of Seven: a New Approach”.

Devlin, Gail Marilyn, B.A. Saskatchewan — Degree by Course Work

Dorrell, Robin Adrian, B.A. Carleton, D.P.A. Carleton — Degree by Course Work

Fenrick, William John, B.A. R.M.C. — Degree by Course Work

Levy, Gary Edmund, B.A. Saskatchewan — Degree by Course Work

Lightbody, James William, B.A. Manitoba — Degree by Course Work

MacLeod, Gerald Allen, DIP. ED. Saskatchewan, DIP. ETUDES FRANCAISES, Univ. de Poitiers — Degree by Course Work

Peck, Mary Evelyn, B.A. McGill — Degree by Course Work

Shortt, Samuel E. D., B.A. McGill — Degree by Course Work

Wesley, John Paul, B.A. Toronto — Degree by Course Work

ECONOMICS

Doucet, Gerald, B.A. Ottawa — “The Optimum Size of Collectivities and the Theory of Public Goods”.

Gower, David E., B.A. British Columbia — “A Theoretical Evaluation of the Relationship Between Internal Migration and Earnings”.

Kamp, Robert Cornelius, B.A. Calgary — Degree by Course Work

Langley, Paul Christopher, B.SC. Hull — “The Estimation and Determinants of Male Net Migration for the Counties of Ontario 1941-61”.

ENGLISH

- Boardman, Barbara Mary, B.A. Carleton — "Creativity and Destruction: Order in Webster's Vision".
- Brunet, Roger Andrew, B.A. Carleton — "The Mystic Vision of Olaf Stapledon: The Spirit in Crisis".
- Farley, Susan Evelyn, B.A. Ottawa — "The Sacred and the Profane in the Novels of D. H. Lawrence".
- Jones, Lawrence William, B.A. Carleton — "John Steinbeck as Fabulist: A Study of the Major Post-War Fiction".
- MacMillan, Duane Johnson, B.A. Queen's — "From Short Stories to Novel: An Examination of William Faulkner's *Pylon*, *Knight's Gambit*, *The Unvanquished*".
- McDonald, Lawrence Thomas Russell, B.A. R.M.C. — "A Study of the Structure and Meaning of Hawthorne's *The Marble Faun*".
- McKellar, Iain Howell, B.A. Carleton — "The Innocents of Morley Callaghan".
- McMullin, Stanley Edward, B.A. Carleton — "The Promised Land Motif in the Works of Frederick Philip Grove".
- Murphy, Sharon Mary, B.A. Carleton — "Self-Discovery: The Search for Values in the Works of Robertson Davies".
- Rodseth, Julius Victor, B.A. Univ. of the Witwatersrand — "The Search for Identity in the Plays of Harold Pinter".

FRENCH

- Bailey, James Arthur, B.A. Carleton — Degree by Course Work
- Elysee-Collen, Rex, B.A. Carleton — Degree by Course Work
- Isaacs, Roger McKenzie, B.A. West Indies — "Contribution a l'étude des rapports de Baudelaire et Delacroix".
- Jagtiani, Sudha, B.A. Elphinstone College — Degree by Course Work
- Rochon, Joseph Armand, B.A., B.PH. Ottawa — Degree by Course Work

HISTORY

- Boehmer, Arthur John, B.A. Carleton — Degree by Course Work
- Brown, Daylor Chester, B.A. R.M.C. — Degree by Course Work
- Brown, Thomas E., B.A. Brock — Degree by Course Work
- Brown, William Anthony, B.A. Toronto — Degree by Course Work
- Bush, Edward Forbes, B.A. Cambridge — "The Canadian 'Fast Line' on the North Atlantic, 1886-1915".
- Craigie, Cynthia Helen, B.A. Toronto — "The Influence of the Timber Trade and Philemon Wright on the Social and Economic Development of Hull Township 1800-1850".
- Ezrin, Hershell Elliott, B.A. Toronto — Degree by Course Work
- Harris, John Richard, B.A. Toronto — Degree by Course Work
- Owen, David Arthur, B.A. Toronto — Degree by Course Work
- Reid, James Edgar, B.A. Queen's — Degree by Course Work
- Smart, John David, B.A. Toronto — "The Patrons of Industry in Ontario".
- Vigod, Bernard Leon, B.A. Manitoba — Degree by Course Work

INTERNATIONAL AFFAIRS

- Fournier, Robert Neil, B.A. Western Ontario — Degree by Course Work
Harrold, Randy, B.A. Alberta — Degree by Course Work
Mwasakafyuka, Weidi Ngwilulopi, B.A. UCLA — Degree by Course Work
Schnurr, Lawrence John, B.A. Waterloo — Degree by Course Work
Stevens, Douglas Frederick, B.A. Saskatchewan — Degree by Course Work
Thompson, Stephen Russell, B.A. North Carolina — "Coalition Behaviour of French Political Parties in the Fifth Republic".

POLITICAL SCIENCE

- Carr, Donald Russell, B.A. McMaster — Degree by Course Work
Dare, Leo Olaolorun, B.A. Manitoba — Degree by Course Work
Dyer, Bryce Alexander, B.A. Toronto — Degree by Course Work
Goerke, Alfred, B.A. Victoria — Degree by Course Work
Leeney, Peter Francis, B.A. Lakehead, B.A. Carleton — Degree by Course Work
Norcott, Nicholas Edward, B.A. St. Francis Xavier — Degree by Course Work
Segsworth, Robert Verne, B.A. Laurentian — Degree by Course Work
Sheppard, Thomas Wm. Leslie, B.A. Acadia — Degree by Course Work

PSYCHOLOGY

- Allen, George M., B.A. Saskatchewan — "The Role of Common Label Pretraining in Transfer".
De Souza, Margaret, B.A. Carleton — "Effects of Reinforcement Responsibility and Reinforcement Schedule Upon Instrumental Performance"
Laughlin, Terrance J., B.A. Carleton — "Alienation and the Physically Handicapped High School Student".
Martin, Maurice Alan, B.A. Toronto — "The Role of Repetition in the Hook-up Stage of Paired-Associates Learning".
Ramunas, Susan E., B.A. Carleton — "Visual Field Effects in Tachistoscopic Recognition: Scanning or Cerebral Dominance".
Roseman, Gloria, PH.B. Northwestern — "Reversal Learning in Nursery School Children as a Function of Forced Reinforcement and Non-reinforcement".
Schnitzer, Leah Z., B.A., B.L.SC. McGill — "Heat Escape Conditioning and Visual Discrimination in the Tiger Salamander (*Ambystoma Tigrinum*)".
Strawbridge, John E., B.A. Carleton — "The Magnitude of the Frustration Effect in Children as a Function of Reward Expectancy".

PUBLIC ADMINISTRATION

- Benning, James Albert, B.COMM. Saskatchewan — Degree by Course Work
Bhule, Wilfred V., B.A. Tufts — "The Development of Dual Administration in Rhodesia".
Birch, George Alexander, B.SC. R.M.C., D.P.A. Carleton — Degree by Course Work
Elkin, Larry, B.ENG. GEOLOGY Saskatchewan, D.B.A. Saskatchewan — "Contentious Aspects of Publicly Controlled Medical Care Insurance Plans".

Gaba, Simon, B.A., Ghana, D.P.A. Carleton — Degree by Course Work
Gardner, Melvin Thomas, B.APP.SC. U.B.C., B.MECH. ENG. U.S. Naval PG School, M.SC. M.I.T.

Inch, Murray A., B.A. Western Ontario — Degree by Course Work

Levesque, Raoul, B.SOC. SC. Ottawa, M.A. Ottawa — "Program Budgeting in the Government of Canada".

McDermid, Wylda Blanche, B.A., D.P.A. Carleton — Degree by Course Work
McFarlane, Ivan O., B.A. Toronto — "Housing Policy: 3 Levels of Government Action".

Moon, Lloyd, B.A. Western Ontario — Degree by Course Work

Poushinsky, Anatole W., B.SC. Alberta, D.P.A. Carleton — "Introduction of Collective Bargaining in the Canadian Public Service".

Ross, Carl W., B.SC. New Brunswick, M.SC. M.I.T. — "Problems in the Administration of Civilian Personnel in the Department of National Defence Perspective".

Soley, Gary P., B.A. Carleton — Degree by Course Work

Stevens, Thomas James, B.A. British Columbia — "Committees: A Management Technique in Canadian Public Administration with Special Reference to the Department of National Defence".

Theophilus, George, B.SC. London, D.P.A. Carleton — "Budgeting in St. Lucia: Development and Reform Through PPPB".

Therien, Emile J., B.A. St. Lawrence — Degree by Course Work

Toren, Martin Sidney, B.A. B.ED. British Columbia — Degree by Course Work

Veilleux, Gerard Louis, B.A. Laval — Degree by Course Work

Wu, William Shou-Chiang, B.A. National Chengchi University, M.A. Hawaii — "The Sabah Bureaucracy: Its Nativisation and Response to Development".

SOCIOLOGY

Dennie, Donald Aurele J. B.A. Laurentian — "Religion: The Process of Legitimation and Illegitimation in Ancient Israel".

Kassirer, Eve, B.S.A. Guelph — "Professionalization of the Teaching Occupation".

Morrison, Catherine Patricia, B.SC. St. Patrick's College — "The Transactional Approach: A Proposed Theory for the Study of Family Authority Patterns".

Robert, Edouard-Andre, B.A. Ottawa — "Social Status, Reference Groups and Students' Aspirations in a Metropolis".

Van Toever, Doreen Elsie, B.A. Manitoba — "Employment, Status and Rehabilitation".

Webb, Brian Ernest Frank, B.A. Manitoba — "Religiosity: Some Problems of Measurement".

SPANISH

DeChellis, Fernando, B.A. Windsor — Degree by Course Work

Hewis, Ivy Rosina, B.A. Carleton — Degree by Course Work

BIOLOGY

- Brasch, Klaus Rainer, B.Sc. Sir George Williams — "The Effects of Selective Histone Extraction on the Structure of Erythrocyte Chromatin".
- Gruchy, Iola Muriel, B.H.Sc. Macdonald Inst. — "The Behaviour of *Daphnia Pulex* de Geer in a Temperature Gradient, with Special Reference to Exposure to DDT and its Effect upon the Selected Temperature".
- Patterson, James Howard, B.Sc. Carleton — "Relationships Between Aquatic Macro-invertebrate Populations and Water Chemical Concentrations in Beaver Ponds Overlying Precambrian and Ordovician Bedrock".
- Rick, Anne Meachem, B.Sc. Florida — "Mammals from Tikal, Guatemala".
- Valenzuela, Adelina, M.Sc. Universidad Catolica de Chile — "A Morphological Study of the Central Nervous System of the Larva and Adult of *Tenebrio Molitor*".

CHEMISTRY

- Argo, James Lee, B.Sc. Carleton — "The Application of Ion-Beams to the Study of Nuclear Recoil Reactions".
- Court, William Arthur, B.Sc. Carleton — "A Study of the Birch Reduction of 4-Methoxy-benzoic acid. An Approach to the Syntheses of Leurocristine Vincalcaleukoblastine".
- Ford, Donald Arthur, B.Sc. Carleton — "The Reactions of Some S-methyl Xanthates with Trialkyl Phosphites and Dehydrogenation Studies on Two Dicycloalkeno(a,c) benzenes".
- Hodges, Albert Edward, B.Sc. Carleton — "Stereospecific Co-ordination by N,N'-bis-(2-aminoethyl) cyclohexane Trans-1, 2-Diamine".
- Holland, George Walter, B.Sc. Carleton — "Magnetic Anisotropy as an Aid in Structure Elucidation".
- McGregor, Richard Grant, B.Sc. Carleton — "Thallous-Thallis exchange in solutions of the Chloroacetic acids".
- Tang, Juinn-Yann, B.Sc. Taiwan Normal Univ. — "Lysozyme-Catalyzed Hydrolysis of Some -Aryl Di-N-acetylchitobiosides".

GEOLOGY

- Haynes, Simon John, B.Sc. Manchester — "The Conformable Tin-Bearing Pyrrhotite-Pyrite Sills at Renison Bell, Tasmania".

MATHEMATICS

- Anderson, Allan John, B.Sc. Carleton — "Biases in Estimation and Tests of Significance in Sequential Multiple Linear Regression Analysis".
- Pickett, Robert William, B.Sc. British Columbia — Degree by Course Work
- Richardson, Ian, B.Sc. Carleton — Degree by Course Work
- Shum, Daniel T. T. B.Sc. Chu-Hai College — Degree by course work

PHYSICS

- Hunter, Hubert James, B.Sc. Carleton — Degree by Course Work
- Jelly, Doris Helena, B.A. Queen's — "Injection of Van Allen Radiation During Polar Magnetic Substorms".

- Tsatis, Demetre, B.SC. Athens — "The 3.1 MeV Energy Level in C^{37} ".
 Yu, Shiu-Bor, B.SC. Sun Yat Sen, B.SC. Chu Hai, B.SC. Carleton — "Theoretical Study of the Relativistic Electron-Pair for the Neutral Pi-Meson".

Master of Engineering

AERONAUTICAL

- Apparao, Tamirisa Ananta, B.ENG. Andara — "The Effects of Hydrogen/Carbon on Gas Turbine Cycle Performance".
 Iyengar, Satyavan, B.TECH. (MECH. ENG.) Indian Inst. of Technology — "Wave Diagrams for an Exhaust Pulse Generator".
 Mitchell, John, B.SC., (ENG.) Imperial College, London — "Digital Computation of Acceleration and Deceleration of Multi Spool Gas Turbines".
 Tien, Dai Bui, B.ENG. Vietnamese Naval Inst. of Tech. — "The Effects of Electromagnetic Fields Heat Transfer and Viscous Boundary Layer on Gaseous Detonation Waves".

CIVIL

- Sufi, Quasem, B.SC., (ENG.) East Pakistan Univ. of Eng. and Tech. — "Moment-Thrust-Curvature Relationships for Steel Wide Flange Beam-Columns Including Strain Hardening".
 Yeboa, Sampson L., B.SC. Univ. of Science and Tech., Kumasi — "An Evaluation of the Hopkinson Pressure Bar in the Study of Soil Mechanics Problems".

ELECTRICAL

- Brown, Allan Leslie, B.SC., (ENG.) New Brunswick — "Design and Evaluation of a Hybrid Correlator".
 Cornu, Josef, B.A.SC. Catholic Univ. of Louvain — "The Dynamic Operation of Magnetic Reed Relays".
 Cowpland, Michael C. J., B.SC. (ENG.) Imperial College London — "Adaptive Strategies for Optimum Adjustment of a PAM Communications Receiver".
 Hudson, David Paul, B.ENG. Carleton — "Model Studies of the Glucose Homeostatic System".
 Jones, Neil William, B.SC., (ENG.) Saskatchewan — "Two Port Stability and Gain in Terms of Scattering Parameters".
 Patriarche, Michael V., B.ENG. R.M.C. — "A Study of the Physical Limitations of MOS Structures as Voltage Variable Circuit Elements".
 Pauksens, John, B.ENG. Carleton — "Singular Arcs and State Constraints in a Class of Optimal Control Problems".
 Pearce, John Leroy, B.ENG. Carleton — "An Approach to the Fourier Transform and the Digital Computer".
 Piaseckyj, Volodymyr, B.A.SC. Toronto — "A Study of Methods for Predicting the Peaks of a Ship's Heaving Motion".
 Smalley, Allan Ralph, B.SC. Queen's — "On the Simulation of Randomly Time Variant Communication Channels".

MATERIALS

- Baleshta, Theodore M., B.SC. (ENG.) Indiana Inst. of Tech. — "Low-Dose Radiography by Flying X-Ray Spot Scanning (Lisar)".

Forster, Bryan Douglas, B.Sc. (E.ENG.) Saskatchewan — "Coballoy: A New Permanent-Magnet Alloy".

MECHANICAL

Kumar, Vijay, B.Sc., (ENG.) Punjab Eng. College — "The Design of Three Related Gas Turbines For an Experimental Investigation of the Effect of Blade Loading on Performance".

Wang, Yung Kang, B.Sc. National Taiwan — "Pressure, Velocity, Tube Wall Temperature and Heat Loss of Detonation Waves in Acetylene-Oxygen".

Master of Social Work

Askin, Margaret, B.A. St. Joseph's College, Brooklyn

Bain, Ellen Christina, B.A. McMaster

Bell, Denis Colin, B.A. Passionist Monistic Seminary N.Y.

Bonnell, Lois Jean, B.A. British Columbia

Burnett, John Andrew, B.A. Windsor

Burton, William Joseph, B.A. Windsor

Callon, Kathleen Frances, B.A. Toronto

Chang-Kon, Joyce Maria, B.A. Carleton

Charron, Mark Harvey, B.A. St. Patrick's College

Clement, Robert, B.A. Montreal

Derrane, Patrick Joseph, B.A. Windsor

Dodge, Janet Mary, B.A. McMaster

Dodge, Norman J., B.A. Loyola

Ell, Eugenia, L.A., B.A. Ottawa

Fergus, Louise Margaret, B.A. St. Patrick's College

Grant, Anne P., B.A. St. Francis Xavier

Julien, Helene, B.A. Laval

Keck, Theresa Anne, B.A. Saskatchewan

Legault, Luc L., B.A. Ottawa

Liston, John C. A., B.A. Western Ontario

Martel, Robert L. B.A. Ottawa

Massing, Duane H., B.A. Alberta

McAdam, Sheila C., B.A. Queen's

McCabe, Mary C., B.A. St. Dunstan's, Charlottetown

McNamara, Martin C., B.A. Ottawa

Monaghan, Stan, B. F., B.A. Windsor

Myles, Anne Loueen, B.A. Queen's

Nadon, Robert D., B.A. Laurentian

Paquin, Denis, B.A. Montreal

Pasloske, Christopher J., B.A. Saskatchewan

Ponée, Diane, B.A. Ottawa

Richards, Kathleen S., B.A. St. Francis Xavier

Robertson, John Lewis, B.A. Sir George Williams

Robitaille, Solagne C., B.A. Ottawa

Sauvé, Alain, B.A. Montreal

Scott, Jennifer Ann, B.A. Toronto

Tremblay, Raymond D., B.A. Ottawa

Fine Arts

Student art was the prime target of the St. Patrick's College Fine Arts Committee in 1968-69. One exhibition, with entries open to all students, yielded an interesting and lively variety of paintings. Additionally sponsored were one-man shows by John Macadam, Mike Smith, Ruby Ewen, and Bonnie Scissons — all students at St. Patrick's. Three displays of photographs were also shown during the year, one of these by John Lomoro, a student. The second display consisted of photographs of the Canadian Parliament Buildings, loaned by the Still Division of the National Film Board, and the third, photographs of old houses of Quebec by Jean-Paul Morisset. Other exhibitions varied from Canadian Indian Crafts and Art work, mounted in cooperation with the National Museum of Canada, to a unique laser-and-hologram display set up by Dr. John Barry and Dr. Ken Hill of the Canadian Telecommunications Research Laboratory

On the Rideau River campus, five university exhibitions were arranged by Duncan deKergommeaux. These were "Reichart and Wood" from the National Gallery of Canada, "Contemporary Paintings" from the permanent collection of the Art Gallery of Ontario, "de Niverville and deKergommeaux," a travelling exhibit of the National Gallery, "Pop Painters from Ottawa and Montreal", and "Six Austrian Painters." In addition, the Department of Art sponsored four exhibitions in the small gallery of the Loeb Building: "New Acquisitions from the Carleton University Collection," "Canadian Wild Flowers" (published by the *Montreal Star* ca. 1893), "Glass Used in Canada 1840-1920," and "Precolumbian Art from Middle America." The last two exhibitions were arranged in collaboration with the National Museum of Man.

The President's Fine Arts Committee sponsored four concerts in the annual evening Chamber Music series. Two of them, performed by the Danzi Woodwind Quintet and the Brazilian String Quartet,

were all-contemporary programs. These and concerts by Jesus Benites, classical guitarist, and Igor Kipnis, harpsichordist, were arranged by Professor John Churchill and students of the Department of Music.

An outstanding and extremely promising musical activity at Carleton in the 1968-69 season was the advent of a noon-hour chamber concert series. These concerts, held in the small theatre in the Loeb Building, were arranged and very ably performed by Carleton students and staff members with the encouragement and direction of Dr. William Amtmann.

This year's program of dramatic presentations began early in September when the Sock and Buskin Club's "Frosh Revue" presented excerpts from Wilde, Thurber and Pinter in a modish environment of pop groups, strobe lights and psychedelic slides. This penchant for experimental theatre continued when an English translation of the French fantasy *Humulus the Mute*, by Jean Anouilh and Jean Aurenche, was directed by Barbara Boardman for the Sock and Buskin Club. In October, the same club sponsored an evening of three plays which were adjudicated by Madeleine Gobeil of the French Department and Len Holt of the Ottawa Little Theatre. The first production, *What (in Hell) is Going on Here*, was an original experimental drama written and directed by Bob Handforth of Carleton. The play consisted of dramatic scenes, recorded voices and slides which presented the audience with a critical view of modern university education. Noel Coward's *Ways and Means*, directed by Jane McIndoe, and Harold Pinter's *The Dumbwaiter*, directed by Beth Kaplan, completed the triple bill.

The Department of English and The President's Fine Arts Committee sponsored Patrick Dunn's productions of Tennessee Williams' *The Glass Menagerie* and Jean-Paul Sartre's *No Exit*. More than 3,000 people attended these two productions in the Alumni Theatre, a record at Carleton.

The Department of French imported two productions by Le Théâtre Populaire du Quebec. In November the company presented Molière's comedy, *L'Avare* which was followed by Jean Anouilh's highly successful tragedy, *Antigone*. Jules Romains' comedy *Knock*, directed by Erika Klusch and Dr. Hervé Fers, was produced by the students' French Club.

El Coral de Don Fernando, a new theatrical group assembled in the Department of Spanish last year, presented two comedies: Dr. Fernando de Toro-Garland directed *Los Intereses Creados* by Don

Janito Bonavente, and Mr. López-Saiz directed *La Guarda Cuidadosa* by Don Miguel de Cervantes. Both these plays were taken on tour to Laval University in Quebec and Hart House in Toronto.

In March, the Sock and Buskin Club presented Genet's *The Maids*, directed by Erika Klusch. The final play of the 1968-69 season was the University of Waterloo's production of Chekhov's *The Anniversary*, brought to Carleton by the Russian Club.

The Canadian University Drama League Festival, sponsored by the Sock and Buskin Club, was held in Ottawa this year. The winner of the Festival was Carleton's production of "Interview" from *America Hurrah* by Jean-Claude van Itallie. The director of the winning entry was Bob Handforth.

The number of dramatic presentations at Carleton more than doubled from 1967-68 to the 1968-69 season. This fact and the opening of the National Arts Centre with which there is every possibility for exchange of artists, directors, and technicians, make the future of drama at Carleton very promising.

MARILYN MARSHALL,
Chairman, Fine Arts Committee

Extension Program

The Adult Education Committee is responsible for the non-credit courses offered through extension and the coordination and sponsorship of public lectures given at the University. Two students, Marlys Edwardh and Ian Aitkins, have been appointed to the Committee.

During the past year, 32 courses were offered through extension. These courses range in content from practical English, to oral French and Swahili, to prospecting, to a study of the "art of film". Fourteen hundred and seventy-seven (1,477) persons attended these various courses.

In the past, Carleton, under the sponsorship of the Department of Psychology, has supported a very active extension program in Early Childhood Education. This program helps train pre-school teachers. This past year, in three terms, 234 persons took part. Beginning this Fall, Algonquin College will take over this program. Mrs. H. von Luczenbacher, President of the Ottawa Nursery School Association, has expressed to the University and the Department of Psychology, the Association's "deepest thanks".

Two series of public lectures were sponsored by the Committee in 1968-69. The Department of Geography held a series of six lectures entitled "The Changing Northlands". The speakers were:

The Rt. Hon. J. G. Diefenbaker "The Role of the North in the Canadian National Scene: Today and the Future"

J. B. Bird "The Physical Problems of Northern Settlements"

Frank G. Vallee "The Native Peoples of Northern Canada"

T. E. Armstrong "Recent Developments in the Soviet North"

W. C. Wonders "Changing Landscapes of the Yukon and the Mackenzie Basin"

R. A. J. Phillips "Canada's Unknown Arctic"

A series entitled "Geology and Man — The Earth in Our Lives" was sponsored by the Department of Geology. The 3 lectures were:

R. S. Dietz "Astroblemes — Ancient Meteorite Impact Scars"

R. M. Quigley "Geology and Engineering"

K. C. Dunham "Man and Minerals"

The total attendance was 550.

The Committee also sponsored 21 individual lectures. These were:

G. Arciniegas "El Ensayo en la América Latina".

R. Baumgart

I. "Aspects of Political Drama (Brecht; Walser; Weiss)."

II. Informal Public Reading from Own Writings.

G. Carter "The Growing Confrontation in Southern Africa".

E. Cate "Love and Legacy: The Christian Heritage from Roman Paganism".

M. Chamot "The Hermitage, Leningrad".

C. P. Courtney "Benjamin Constant".

R. A. Davison "Frank Norris: *The Octopus and Naturalism*".

S. N. Eisenstadt "Tradition, Change and Modernity: Reflections On the Diversity of Non-Traditional Regimes".

C. Ekwensi "General Title: Culture and Society in West Africa".

M. Enguidanos "Majestad Negra: Dos Poetas del Color".

R. Grimsley "The Feeling for Existence in Rousseau and Kierkegaard".

G. Gusdorf "De la Critique Littéraire a la Science Littéraire".

M. Hamburger "The Art of Translating Poetry".

U. Kitzinger "Britain and Europe — The Uncertain Relationship".

S. Mayne "Readings of Poems by Western Canadian Poets".

J. Mesnard "L'Ironie dans les Pensées de Pascal".

R. Pomeau "La Crise Universitaire en France".

S. Ranganathananda "Shri Ramakrishna and the Spiritual Heritage of Humanity".

N. Sarraute "Le Langage Dans l'Art du Roman".

J. Valverde "Antonio Machado — Introducción a la Lectura de su Poesia."

A. C. Wright "Some Aspects of Russian 20th Century Painting" (with slides).

Following a long period of recommendation and debate, the Adult Education Committee Report to Senate of February 20, 1968 (re Proposals for Adult Education at Carleton) was acted upon and, subsequently, a new administrative position of Assistant to the Registrar, for Part-time Studies was created by the Senate.

Mr. James Murray was appointed to this newly-created position by President Dunton, effective July 1, 1969.

Mr. Murray will have responsibility for coordinating administrative

services for part-time students registered in degree credit courses (Evening Division and Summer Session). Accordingly, he will be available for advice and counsel to the part-time student constituency on the general regulations and requirements for their degrees, specifically in the area of what courses are most efficiently offered in the evening to meet their particular needs. Moreover, he will endeavour to revitalize the channels of communication between the Registrar's Office and the departments with respect to the special needs of this constituency.

In addition, as the administrative arm of the Adult Education Committee, Mr. Murray will have responsibility for implementing the decisions of that committee. He will, furthermore, initiate extensive community liaison in an effort to coordinate the exchange of information on the extension activities of other academic and social institutions in the Ottawa area, particularly as to how Carleton may best utilize its resources towards community needs in this regard. Hence, priority will be given to courses designed to update or continue the education of those people having some university background as well as to the public lecture series as an educative forum on relevant community issues and interests.

J. R. HOFLEY,

Chairman, Committee on Adult Education

The Library

It gives me great pleasure to report that all library departments had a productive and successful year. The volume of routine work accomplished was creditable and at the same time special projects, studies and experiments were undertaken, which contributed usefully to service, to knowledge of library operations and to increased efficiency in responding to rapid growth and intensified demands for services. I would like to record my appreciation to all staff members, who contributed to the success of the year, and especially to our able group of division and department heads: in Technical Services to Mrs. Carter, Miss Jackson and Mrs. Armour, and in Public Services, to Mrs. Wilmeth, Miss Turner, Miss Harvey and for the St. Patrick's Campus, Miss Garland.

Since the state of the collection is always of paramount interest to members of the academic community, I will report at once that 65,681 volumes of books, documents, periodicals and theses were added to the collection, while 45,421 additional items including microforms, recordings, music and maps brought total counted acquisitions to 111,102. The collection as of June 30, 1969 totalled 442,742 composed of 323,066 volumes, including 225,768 books, 44,473 documents, 38,711 bound periodicals, 13,326 unbound volumes of periodicals and 788 theses, with a further 119,676 items, including microforms etc. People tend to discount the inclusion of microforms in statistics but the collection now includes in microform, such sets as the British Sessional Papers and Parliamentary Debates to 1900, and a microform reprinting of American fiction published prior to 1900. In addition to extending back files of the *London Times* and the *New York Times*, the Library embarked, with Canada Council assistance, upon a very expensive project of collecting Canadian newspapers on microfilm. Major acquisitions were the *Toronto Globe*, 1896 to 1936 and the *Vancouver Sun* 1912 to 1960. One should not leave resources such as these unnoted in collection statistics.

Miss Turner's report on the work of the Circulation Department reflects heavy but unpredictable use. The number of volumes lent to students on two-week loan was 243,805, an increase of 32 per cent over the previous year. Total recorded circulation increased to 336,698 an increase of only 15 per cent, due to decreases in reserve circulation. Miss Turner made two arduous but interesting and very useful studies of the circulation of reserve books. In Spring, 1968, some 13,263 copies of 7,043 titles were found to be on reserve for 236 courses. A survey showed that only 11 per cent of copies on three-day and one-week reserve had circulated 15 times or more, while 56 per cent had circulated five times or less. Of copies on overnight reserve, 24 per cent had circulated 15 times or more, while 49 per cent had circulated five times or less. As a result of this survey titles in heavy demand were duplicated, placing additional copies on the open shelves, and little used titles were removed from reserve.

Miss Turner repeated her study in May and June, 1969, and results seem to indicate only slight improvement in predicting student demand. Reserve books are those designated by faculty members as those most urgently required for courses. There were on reserve 9,920 copies of 4,830 titles. Circulation of 15 times or more was recorded for 24 per cent of copies on overnight reserve, but 50 per cent of copies circulated five times or less. Circulation of 15 times or more was recorded for 12 per cent of copies on three-day and one-week reserve but 47 per cent of copies circulated five times or less. One very disappointing aspect of use was a decline in the use of microforms from 1,952 in 1967/68 to 1,729 in 1968/69.

Written requests received for books and periodicals rose from 5,242 in 1967/68 to 5,864 in 1968/69. Since demands continued to be numerous but relatively unpredictable in so far as reserve books were concerned, it was decided to assign one of the reference librarians to attempt a concerted approach to the meeting of urgent student demand for books. Mr. James Nalty was given two assistants and undertook to order duplicates and additional titles, giving particular attention to classes with over 50 students, checking reading lists, coordinating the handling of requests, with a view to noting weaknesses in the collection and studying interlibrary loan requests for the same purpose. Between December and May, Mr. Nalty ordered 6,795 duplicates. The total added in the year was 8,707. It is hoped that this will bring about a reduction in requests. Sampling indicates that use of materials in the library is about three times greater than recorded circulation. This involves use and reshelving

of an estimated 100,000 volumes in a winter month. This is heavy pressure on a collection of some 300,000 volumes.

Extended surveys of seat occupancy were made, showing that the number of persons seated did not exceed 752. The Library has 1,476 seats. It seems probable that complaints about a shortage of seats result from general preference for individual carrels and studies. An average of 50 external borrowers a month were registered and unknown numbers of high school and other students used the Library contributing to an unknown degree to the pressure upon the collection. Study hall hours were extended to midnight seven days a week, almost certainly adding substantially to the number of volumes used but never charged out at circulation.

Student members of the Library Committee, headed by Mr. Art Lechnitz, made energetic, imaginative and constructive efforts to identify, report and find solutions to student problems. Losses were high in 1967/68 amounting to 1,624 books, 40 bound and 688 unbound periodicals. The student prefects headed by Mr. Steve Feiner and backed by Students' Council, attempted to improve exit control and to decrease losses in 1968/69. It is not yet possible to estimate the degree of their success.

The Reference Department report indicates increased use of services as well as of the collection. More students were introduced to the library during orientation and more completed exercises in the use of the library. More special class tours were arranged. More reading lists were checked and more bibliographies prepared. A short version of the *Library Manual for Faculty Members* was prepared and by the end of the year two parts of the long awaited documents handbook had been completed, these being for Canadian and United Nations documents. A shelf guide to assist borrowers in finding U.N. documents was also prepared.

An interesting experiment was the setting up of an uncatalogued collection of contemporary paperbacks of current interest. The reference librarians look forward to continuing this stimulating service.

The total number of completed interlibrary loan transactions was 9,174 as compared with 3,955 in the previous year. The increasing numbers of graduate students throughout the province are putting a heavy strain upon interlibrary loan staffs. The interuniversity transit system has speeded physical transport of books and has saved some staff time but cost of interlibrary loan service remains high and success is not always satisfactory. Books often cannot be lent by the institution, which is asked for them. At Carleton there were 1,493

unfilled transactions in addition to the 9,174 completed ones. Books on reserve, in the reference collection or known to be in demand for courses, cannot be lent. Special appreciation should be expressed for the work of Mrs. Frances Welwood, who not only coped with the enormous increase in interlibrary loans, but also, for a period of five months, attempted to give some special service to Science and Engineering after the departure of Mrs. Pavars.

A successful year is reported for the St. Patrick's Campus libraries. Existing services were reorganized and extended and new services initiated. Much remains to be done, but Miss Garland deserves special mention for her energy, enthusiasm and ability to develop integrated services within a cooperative system. Processing continued to be handled in the MacOdrum Library. The total number of new volumes processed for the St. Patrick's Campus was 6,590. The total number reclassified was 2,238. The number of volumes recorded as circulated in the College Library was 23,335. Rideau River Campus students borrowed 1,135 volumes from the S.P.C. Library and S.P.C. students borrowed 6,950 from MacOdrum.

The Technical Services Division did a fine job in spite of many serious difficulties. Space was so inadequate that for months staff members, who should have had at least 125 square feet of work space each, were crowded into an average of 65 square feet each. The development of a corps of library technicians with five different levels of training and experience has been very useful but also very taxing. The Cataloguing Department has become a training ground for technicians, who have transferred to Reference, Book Selection, Acquisitions and to the St. Patrick's Campus. Many of these staff members are of college and marriageable age and leave to continue their studies or for personal reasons, so that training of new staff members must constantly be undertaken. Finally, it must be acknowledged that the lack of satisfactory book selection policies, procedures and staff imposed an increasingly heavy burden upon the Technical Services Division as well as upon the University Librarian. The book budget of \$625,000 was spent in good time as were Canada Council grants, money for the Social Science Reading Room and the budget for the St. Patrick's Campus. There were very heavy expenditures upon back files of journals, microforms and other expensive sets. The planned growth of the monographic collection was not as great as expected, although the cataloguing of 52,735 books and documents was certainly a very creditable achievement on the part of Technical Services. The failure was in book selection.

It is no simple task to spend a library materials budget of \$625,000 in such a way as best to meet the needs of present and future students at all levels from qualifying year to the doctorate, to give due regard to the needs of large numbers of students wanting the same book at the same time and in addition to provide for occasional intensive use of specialized material by advanced students and finally to avoid unnecessary duplication of little used materials already in Ottawa or in other university libraries in Ontario. I think it is fair to say that our primary concern in collecting is still to respond to need, but need is increasingly difficult to predict as courses proliferate and the number of honours and graduate students increases. Although wishing to see librarians assume greatly increased responsibility for book selection, we have always when faced by a choice, sacrificed book selection to other services. To be done well, it requires a high degree of knowledge, judgment, organization, speed and hard work. In part because of shortage of staff and in part because many of us like it, we have tried to carry on book selection as a part-time activity, always suffering because of pressure of other work. The collection, the budget, the growth of graduate studies and the developing provincial cooperative system, all make this impossible. In my opinion, book selection is the most serious problem awaiting solution in the Library at this time.

It was with great regret that we received the resignation of the Chief Cataloguer, Miss Susan Jackson. Her intelligence, application and organizational ability will be greatly missed.

As in previous years, we are indebted to numbers of individuals, embassies, organizations and institutions for much appreciated gifts received in the course of the year. The most substantial gift was that of \$31,000 from the Canada Council. The most extensive and unusual was the collection of scores formerly belonging to the late, lamented Ottawa Philharmonic Society.

HILDA G. GIFFORD,
Librarian

Report of the Registrar

Traditionally the Registrar's contribution to a Presidential Report is a body of generalized enrolment statistics, repetitive in that each Faculty and School reports its own enrolment, and misleading to the extent that any generalization is misleading. If the tradition is perpetuated here, it is only to demonstrate that the University continues to grow vigorously, to serve a constituency that is increasingly national and international, and to attract a growing number of students to all levels of its undergraduate, graduate, and professional programs.

The Winter Session 68-69 saw enrolment at Carleton rise to 10,006 full-time and part-time students on both the Rideau River and St. Patrick's Campuses. Full-time enrolment for both campuses was 5,971, an increase of 15.5%, but it may be significant that within this total, enrolment on the Rideau River Campus grew 18.5% from 4,255 in 67-68 to 5,042 in 68-69.

The growth in part-time enrolment is beginning to show interesting tendencies. On one hand, part-time enrolment in the Winter Session for both campuses increased from 3,497 in 67-68 to 4,035 for 68-69, a rate of 15.4% which by today's standards is almost conventional. On the other hand Summer School, which had enjoyed a modest growth of 6.3% to reach 2,368 in 1967, grew 21.3% to an enrolment of 2,873 students in 1968.

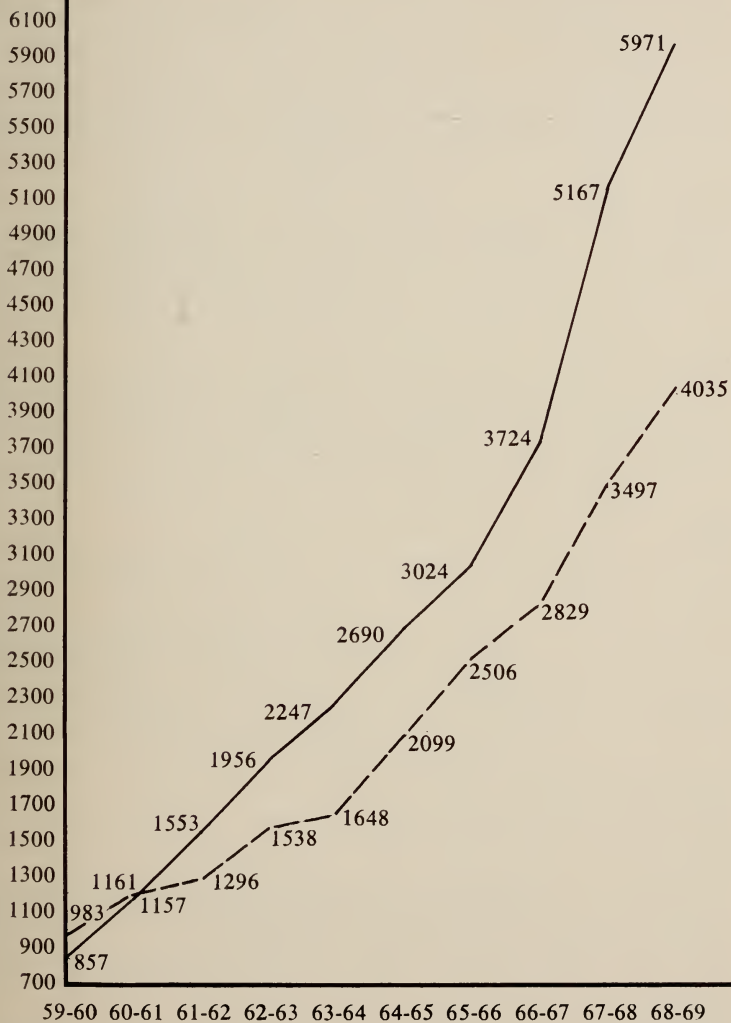
There were no significant trends in the geographic origins of our students as compared to the previous academic year. Some sixty-nine percent came from the Ottawa area, including Hull and district, and the remainder came mainly from other parts of Ontario and Quebec, with representation from all other provinces and most of the countries of the world.

J. I. JACKSON,
Registrar

CARLETON UNIVERSITY ENROLMENT

WINTER SESSIONS 1958-59 to 1968-69

FULL-TIME ————— PART-TIME - - - - -



RIDEAU RIVER CAMPUS
and ST. PATRICK'S CAMPUS COMBINED

GEOGRAPHICAL ORIGINS, FULL-TIME DAY STUDENTS 1968-69

CANADA: (5,583)

Ottawa and district (3,795); other Ontario centres (936); Hull and district (346); other Quebec centres (295); Newfoundland (7); Nova Scotia (37); Prince Edward Island (6); New Brunswick (19); Manitoba (26); Saskatchewan (32); Alberta (40); British Columbia (35); Yukon (1); Northwest Territories (8)

EUROPE: (33)

Austria (1); Belgium (1); Britain (3); France (1); West Germany (6); Greece (2); Ireland-Eire (1); Italy (3); Netherlands (1); Spain (1); Sweden (1); Switzerland (2); Yugoslavia (1)

AFRICA: (43)

Botswana (1); Cameroon (4); Ethiopia (2); Ghana (4); Kenya (1); Lesotho (2); Malawi (1); Nigeria (7); Sierra Leone (1); South Africa (3); S. Rhodesia (4); Tanzania (7); Tunisia (1); U.A.R.-Egypt (2); Uganda (1); Zambia (2)

MIDDLE EAST: (10)

Iran (3); Israel (3); Lebanon (1); Malta (2); Syria (1)

ASIA: (141)

Brunei (1); Hong Kong (53); India (36); Indonesia (3); Japan (3); Korea (1); Malaysia (14); Pakistan (7); Philippines (1); Singapore (5); Taiwan (9); Thailand (5); Vietnam (3)

AUSTRALASIA: (4)

Australia (2); New Zealand (2)

WEST INDIES: (51)

Antigua (5); Barbados (5); Bermuda (3); Grenada (7); Jamaica (14); Monserrat (1); Nassau & Bahamas (3); St. Kitts & Nevis (1); St. Lucia (2); St. Vincent (1); Trinidad and Tobago (9)

AMERICA: (97)

United States (79); Argentina (1); British Honduras (6); Brazil (1); Chile (1); Colombia (2); Guyana (6); Peru (1)

UNSPECIFIED: (9)

RIDEAU RIVER CAMPUS and ST. PATRICK'S CAMPUS COMBINED

DEGREES, DIPLOMAS, AND CERTIFICATES AWARDED
NOVEMBER, 1968, AND MAY, 1969

First Degrees

*Bachelor of Arts (B.A.)	705	
Bachelor of Arts (with honours)	125	
*Bachelor of Commerce (B.COM.)	45	
Bachelor of Engineering (B.ENG.)	66	
Bachelor of Journalism (B.J.)	56	
Bachelor of Science (B.SC.)	99	
Bachelor of Science (with honours)	42	(1138)

Post-Graduate Degrees

Master of Arts (M.A.)	93	
Master of Engineering (M.ENG.)	20	
Master of Science (M.SC.)	21	
Master of Social Work (M.S.W.)	37	
Doctor of Philosophy (PH.D.)	10	(181)

Diplomas

Public Administration (D.P.A.)	22	(22)
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Certificates

Public Service Studies (C.P.S.S.)	22	(22)
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*Conferred at St. Patrick's Campus: 212 (B.A.)
29 (B.COM.)
TOTAL

1,363

FULL-TIME ENROLMENT WINTER SESSION 1968-69

	Q.U.Y.	I	II	III	IV	Grad.	Cert.	Spec.	Total
Architecture	—	32	—	—	—	—	—	—	32
Arts	112	895	775	682	159	272	—	26	2,921
Arts St. Patrick's	92	272	228	219	—	—	—	2	813
Science	92	271	225	186	59	102	—	5	940
Commerce	7	82	65	51	5	—	—	—	210
Commerce St. Patrick's	—	—	3	23	—	—	—	—	26
Engineering	—	184	154	99	72	74	—	—	583
Journalism	15	108	63	50	28	—	—	—	264
Public Admin.	—	—	—	—	—	72	5	—	77
Social Work	—	—	—	—	—	90	—	—	90
Special	—	—	—	—	—	—	—	15	15
TOTALS	318	1,844	1,513	1,310	323	610	5	48	5,971

Student Affairs

REPORT OF THE DEAN OF STUDENT SERVICES

The year 1968-69 was one of increased student involvement in University affairs. It was marked by the implementation of N.U.G. (New University Government) which featured student participation in University government at the Department, Faculty Board, Senate and Board of Governors levels. Although it is too early to assess all of the implications of these changes, preliminary evaluation indicates that discussions and deliberations at all levels have been sharpened with the participation of student members.

In addition to playing a very important role in the implementation of N.U.G., the Students' Council was active in educational programing. Of particular interest was the non-credit course on poverty. A good deal of interest was shown in this course and it is anticipated that more such programing will be done next year, dealing with contemporary issues which are of interest and concern to many students.

Another innovation during the past year was the establishment of a co-operative nursery for parent-students. Facilities were made available and the students organized and supervised the children's activities so as to provide more than adequate day-care which might otherwise not have been possible because of cost. It is hoped to continue this service next fall on the same basis.

In the residence community a great deal of time and thought was given to the question of philosophy and structure of residence living. The commission which examined this question produced a useful report which in the most part has been implemented. Two of the most significant aspects are the development of a small co-educational residence and much greater involvement of residents in the management of the Residences. These changes, plus a doubling of the number of residents with the completion of the new tower for men, will undoubtedly lead to a very dynamic year within the resi-

dence community.

Mr. André Elbaz, who served as part-time Overseas Students' Adviser, will be returning to teaching full-time in the French Department. A full-time Adviser has been appointed for next year. During his years of service in the position Mr. Elbaz was instrumental in the development of many key programs for overseas students and his contribution is appreciated by both the students and the University.

Professor Victor F. Valentine was appointed to the Position of Dean of Student Services, formerly the position was that of Dean of Students.

On the St. Patrick's College Campus Miss Suzanne Veit was appointed to the position of Co-ordinator of Student Services, formerly the position was that of Dean of Women.

Reports from the Awards Office, Housing and Placement Office, Athletic Department, Counselling and Health Services, and Students' Council follow.

VICTOR F. VALENTINE,
Dean of Student Services

FINANCIAL AID TO STUDENTS 1968/69

A. Awards Administered by Carleton University

1. Scholarships

C.U. Undergraduate—Entrance	\$ 43,890	(103 in 1968; 14 continuing from previous years)
—In-Course	\$ 38,815	(144)

2. Graduate Fellowships

(a) Teaching	\$ 77,500	(34)
Departmental	\$105,600	(80)

3. Prizes

	\$ 2,305	(33)
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4. Bursaries

Undergraduate —Entrance	\$ 12,040	(73)
—In-Course	\$ 49,885	(297)
Graduate (C.U.)	\$ 15,897	(72)

Total \$ 77,822 (442)

B. Awards or Funds Administered by Other Organizations but tenable at Carleton University

1. Department of University Affairs, Province of Ontario

Fellowships	\$ 10,050	(67)
Entrance Scholarships	\$165,000	(110)
Ontario Student Awards Program:		
Loans	\$1,025,030.00	
Grants	\$1,025,428.00	
<hr style="width: 20%; margin: 5px auto;"/>		
Total Awards	\$2,050,458.00	(1857)
2. Rehabilitation Services Branch, Province of Ontario

	\$8,022.50	(15)
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3. Department of Education, Province of Quebec

Loans	\$ 69,950.00	
Bursaries	\$ 28,170.00	
<hr style="width: 20%; margin: 5px auto;"/>		
Total Awards	\$ 98,120.00	(123)
4. Children of War Dead (Educational Assistance Act)

	\$12,893.50	(21)
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5. Department of National Defence

(ROTP)	\$ 12,247.50	(22)
(UTPM)	\$ 10,660.00	(19)
Other	\$ 3,982.50	(7)
6. External Aid (Colombo Plan, United Nations Technical Assistance. Commonwealth Scholarships)

	\$ 43,080.00	(85)
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7. Indian Affairs & Northern Development

	\$ 2,707.25	(6)
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8. Miscellaneous (Scholarships from government agencies, services benevolent funds, etc)

	\$ 23,025.00	(61)
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9. Subsidization of Tuition Fees by Employing Agencies

	\$ 25,342.00	(55)
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C. Loan Funds Administered by Carleton University

- | | | |
|---|-------------|-------|
| Parker Loan Fund (now disbanded) | \$ 6,207.00 | (10) |
| Royal Bank Loan Fund | \$16,728.00 | (45) |
| Small Loan Fund | \$20,611.00 | (418) |
| English-Speaking Union Loan Fund | \$ 115.00 | (2) |
| Royal Commonwealth Society Loan Fund | \$ 100.00 | (1) |
| School of Social Work Emergency Loan Fund (Pi Beta Phi) | \$ 1,815.00 | (15) |
| Miscellaneous | \$ 1,627.00 | (11) |

D. Canada Student Loans Plan

(Provinces other than Ontario and Quebec)

	<i>Entering</i>	<i>In-Course</i>	<i>Graduate</i>	<i>Total</i>
Alberta	\$2,300 (6)	\$5,805 (14)	\$1,000 (1)	\$ 9,105 (21)
British Columbia	1,000 (1)	7,020 (8)	2,700 (3)	10,720 (12)
Manitoba	3,695 (4)	2,475 (4)	—	6,170 (8)
New Brunswick	7,262 (9)	1,000 (1)	—	8,262 (10)
Newfoundland	—	—	300 (1)	300 (1)
Nova Scotia	5,014 (6)	8,978 (10)	—	2,000 (5)
Prince Edward Island	1,500 (4)	500 (1)	—	13,992 (16)
Saskatchewan	3,475 (5)	4,828 (6)	1,000 (1)	9,303 (12)
	\$24,246 (35)	\$30,606 (44)	\$5,000 (6)	\$59,852 (85)

MRS. A. T. LOATES,
Awards Officer

OFF-CAMPUS HOUSING

An anticipated crisis was averted by appeals to Ottawa residents for additional off-campus housing. Short term accommodation had been arranged with local hotels to meet this emergency but fortunately it was not required.

Accommodation in Ottawa South was supplemented by other areas of the city and some 1700 rooms and 400 self-contained units were listed by our office.

Liaison was maintained with the Overseas Student Reception Service in an effort to provide these students with acceptable accommodation.

PLACEMENT

SUMMER EMPLOYMENT

As a result of a suggestion made by the AUCC a local committee was formed to study the bleak employment situation. This committee consisted of representatives from institutions of higher learning in Ottawa, business, industry and the Public Service. The Carleton Placement Officer was named chairman of the Committee. Sub-committees were formed to deal specifically with items such as statistical reporting, employment opportunities, advertising etc. The principle aim of the study was to determine the extent of the summer employment crisis.

In February our office sent out a questionnaire to Carleton students requiring summer employment. The results of this survey in-

licated that only 15 per cent of these students had obtained positions at that time.

A central office was opened in the Centennial Centre on April 1, 1969, to co-ordinate all summer employment efforts and the Carleton placement staff worked along with other educational institutions and Canada Manpower. At that time 1479 applications for summer employment had been received from Carleton students. The decision in mid-April to increase the number of summer jobs in Government Departments by at least 10 per cent helped alleviate the situation.

On the suggestion of the local summer employment committee AUCC approved a recommendation that a questionnaire be sent out at fall registration to assess the actual number of students who were able to find positions for the summer.

PART-TIME EMPLOYMENT

Increased student needs for financial aid required more part-time employment action. Attempts were made to direct on-campus employment through this office.

The urgent need for funds necessitated acceptance of employment regardless of low pay.

GRADUATE EMPLOYMENT

Only 113 potential employers visited the campus this year compared to 145 the previous year. This decrease was the result of the economic situation and the small graduating Commerce class (only 8 Commerce students graduated because of the change from a 3- to a 4-year program). Some employers who did not visit the campus last year found other recruiting methods inefficient and have indicated a desire to return to on-campus recruiting. Opportunities for graduates in Engineering, Journalism, Economics, Commerce, Math and Statistics were good.

The closing of summer courses for teacher training left many Arts students in difficulty. Finally, however, shortages of qualified teachers prompted the Ontario Department of Education to grant Letters of Permission. A summer training course was also initiated at Lakehead University for those interested in teaching in Northern Ontario.

The trend of "Jobs Galore for Graduates" as reported in previous years has turned to "Glutted Markets in Some Disciplines". However, opportunities are still available for graduates showing initiative, ability, determination, and persistence.

REPORT ON THE 1969 SPRING GRADUATES (UNDERGRADUATES AND GRADUATES)

A. *Employment after Graduation* (Positions Accepted)

1. *Business and Industry* (Including C.A. firms, newspapers, etc.)

Arts	23	Commerce	2
Journalism	23	Science	9
Engineering	18		
		TOTAL	75

2. *Government Agencies* (Federal—including C.U.S.O., Provincial, Civic, Foreign)

Arts	42	Commerce	0
Journalism	6	Science	10
Engineering	9		
		TOTAL	67

3. *Teaching* (University, Secondary, Public and Foreign)

Arts	17	Commerce	0
Journalism	0	Science	5
Engineering	0		
		TOTAL	22

164

B. *Further Studies* (anticipated)

1. *Continue in their respective disciplines*

Arts	90	Commerce	0
Journalism	3	Science	34
Engineering	6		
		TOTAL	133

2. *Professional Studies*

Colleges of Education	40	Social Work	0
Law	13	Journalism	5
Business Admin.	1	International	
Dentistry	1	Affairs	5
D. Pub. Admin.	2	Computer	
Library Science	1	Programming	2
		Ottawa Teachers' College	12
		TOTAL	82

215

Some Universities: Leningrad University, New York State University, University of London, Hebrew University, Jerusalem, Stanford University, Ohio State University, Iowa State University.

C. Others

1. Arts	42—Contact made regarding employment
	4—on External Aid—returning home
Journalism	3—Contact made regarding employment
	1—Free Lance writer
Engineering	5—Contact made regarding employment
Commerce	0—Contact made regarding employment
Science	11—Contact made regarding employment
	TOTAL 66

2. Going Abroad

Arts	10	Commerce	0
Journalism	1	Science	2
Engineering	1		
		TOTAL	14

D. Unreported or Undecided Students 331

F. Summary

Entering employment after graduation	164
Anticipating further studies	215
Going Abroad	14
Others	66
Unreported	331

790

Master of Social Work and Certificate in
Public Service Studies will be returning to
their previous employment 51

TOTAL GRADUATES 841

MRS. N. J. TREMBLAY,
Housing and Placement Officer

ATHLETIC DEPARTMENT

The athletic and recreational programs at Carleton passed new milestones in the 1968-69 year.

Under the very capable leadership of Mr. Kim McCuaig the men's intramural program experienced a most phenomenal growth in student participation. Only two years ago we were justly proud to report that 700 members of the University community had been involved in the men's division; however, it was a modest figure by comparison with this year's record of over a third of the male

enrolment. Because the intramural calibre has improved greatly in recent years plans are now underway to establish another level of play which will provide greater opportunity for participation by the less skillful students.

Unfortunately, it is not possible to report similar successes in women's intramurals. During the period of construction for the second stage of the athletic complex, it was generally conceded that new facilities would rectify this situation. We now know differently and thus new approaches and new ideas must be considered for the coming year. One area of activity that did enjoy a solid measure of success for the women students was a regular class of instruction in modern dance. It could well be that competitive activities at the intramural level have much less appeal for college women than has been anticipated.

In intercollegiate athletics the tennis team, once again under the guidance of Professor T. J. Scanlon, brought home championship laurels. This year's victory was doubly satisfying since this was Carleton's first championship in the prestigious and highly competitive Ontario Quebec Athletic Association.

Football, basketball and hockey provided much interest and excitement. All three teams were ranked in the top ten in Canada. The basketball team went through an undefeated season to win the division title while the hockey team enjoyed its most successful season tying Laval for the first place in the Eastern Division.

It is interesting to note that the addition of the four new squash courts brought many members of faculty into athletic facilities for the first time. Their participation along with that of the students and some alumni made squash one of the truly popular activities on campus.

It has been a long standing desire by the students to have a greater number of opportunities to meet faculty in more informal surroundings. The Department hopes that future planning will facilitate an even greater association of both students and faculty.

KEITH N. HARRIS,
Director of Athletics

STUDENTS' ASSOCIATION

The past year has been marked by outbursts of student impatience and protest at many universities across Canada. The numerous

"causes" adopted by students have manifested themselves in tactics ranging from classroom boycotts to destructive confrontations. A study of "causes" and tactics lends support to the view that our universities must be examined within a Canadian context. Any refinement of that examination must focus on the conditions which prevail at individual universities across the country.

Conditions and problems at Carleton University have drawn the attention of the Students' Association over the past year. In dealing with the situation the Association, through its legislative Council, has recognized the unique character of Carleton University. The Association has found the President of the University and his administrative personnel to be readily accessible, open, and frank in their discussion about the administrative "hangups" of a growing institution. The new appointments to the offices of Dean of Student Services and Registrar have strengthened this view. The faculty, in general, has remained progressive and has continued to engage in a dialogue with student representatives on a number of issues. In light of the foregoing, and supported by the student electorate, the Students' Association over the past year adopted an approach to issues which put emphasis on the widest range of consultation and discussion amongst the component members of the University.

The Association utilized the open channels of communication to make it abundantly clear that its prime concern was with the education experience as it related to the individual student. Academocracy and academic reform became the goals through which the student could become an active participant in his or her education. Much change occurred outright at the classroom level. However the major initial step occurred in an institutionalized framework with the adoption of the New University Government.

The New University Government was based, for the most part, on reforms suggested in the 1967-68 Students' Council submission and supported through to its adoption by the 1968-69 Students' Council. During a campus-wide referendum, which established a record turnout at the polls, the student body approved the immediate implementation of N.U.G. with possible reforms in the future. Shortly thereafter students were elected to departmental boards (102 participants), faculty boards (107), new Senate (6) and Board of Governors (1). The numbers game is of little importance. What is important is that students have the opportunity to influence and direct those decisions which ultimately affect them. As in any new experiment difficulties do arise and in this case the problem to be

solved is one of communication and feedback between student participants and the general student body.

In the area of academic reform the Association, through its Education Commission, established a student-run and student-centred course dealing with poverty in Canada. The success of "Naked Poverty" prompted its organizers to petition Senate for the establishment of a credit course on aspects of twentieth century society. This interdisciplinary course has been approved by Senate and is being planned for presentation in the next academic session under the auspices of the Education Commission. Further work in the area of academic reform centred about the Association's Summer Free School project operated for and by high school students with the co-operation of the Collegiate Institute Board, and the publication of the Student Course Guide which offered a critique of courses available to first and qualifying year students.

The Association spent a good deal of time considering the state of student unionism in Canada. For the first time since its original commitment to the Canadian Union of Students the Association undertook a reassessment of its membership in that body. The most hard-fought campaign of the year pitted anti-CUS supporters against pro-CUS supporters in a series of debates. The results of the referendum approved Carleton's withdrawal from C.U.S. However, the issue did not rest there as members of the Association in discussion with other universities began to consider plans to modify the greatly weakened C.U.S. or to establish a new organization.

After years in the planning, construction began on the \$4.25 million University Centre. The Association, realizing that it would soon be responsible for the running of the complex hired Mr. Rick Mortimer as Executive-Director. Mr. Mortimer began research into operations and programming and oversaw the creation of a University Centre Management Committee composed of students, faculty, administrators, and staff.

In the area of special projects the Association met with a number of successes. The Library Committee organized a provincial conference on the library crisis facing universities. Almost every major institution in the province sent delegations composed of students, faculty, and administrators in a unique effort to focus on the problems and to prescribe solutions. Government-University relations were studied in a series of panel discussions during Student Workshop Day. International Week and Treasure Van offered social-cultural programs. The Association also initiated its Expo '70 Charter

flight and tour.

Extensive adjustment took place within the realm of administrative organization. The Association became incorporated under the laws of the province. General recommendations of the P. S. Ross Report on internal organization were implemented. The growth in activities necessitated the hiring of an additional staff member as Mrs. F. Simpson joined Mrs. R. Brown, Executive Secretary, in handling the day-to-day office operations. Expansion will continue as a result of University Centre operations and the Association's efforts to have the University Bookstore become part of its operations.

It has become quite evident over the past few years that the Students' Association's interests go far beyond the annual successes of Homecoming and Winter Weekend. Education reform and expanded student services have been and will continue to be the prime concerns of the Association as it continues to grow with Carleton University.

JERRY L. LAMPERT,
President, Students' Association

COUNSELLING AND HEALTH SERVICES

University Student Health programs are faced with the unanswered problem of financing their growth and development. Presently, like several important aspects of the university experience, government support is non-existent. There is little evidence that such help is forthcoming, but the need for health services increases steadily. In the past we attempted to meet the cost of the Counselling and Health Services at Carleton by charging a student health fee; this approach has proven impractical for our modest service has been a deficit operation allowing for minimal growth.

Even a casual examination of the situation would make evident the need for adequate health services. Several factors are readily apparent. 1) Community mental and physical health facilities are taxed meeting the needs of local residents without taking into account a student population from out of town. 2) Services readily available and staffed by professionals familiar with the stresses and problems students face, make it possible to provide treatment while interferring minimally with the academic pursuit of the student, thus making possible a better return on the dollar invested in education. 3) Health personnel within the university community are a potential educa-

tional resource. 4) During the past three years the number of students using the Medical Services has increased proportionally with the increase in total student enrolment. The number of students visiting the Counselling Service has increased from about four per cent of the student population in 1966-67 to eight per cent in 1968-69:

<u>Total Population</u>		<u>Medical Services</u>		<u>Counselling Service</u>	
		<u>No. of students</u>	<u>No. of visits</u>	<u>No. of students</u>	<u>No. of visits</u>
1966-67	3724	2624	3572	182	534
1968-69	5971	4587	5917	508	1154

Staffing a growing program is a problem of significance. In Medical Services we have been fortunate to have Dr. Jean Davey providing half time for the past three years; her work has been valued greatly. In 1967-68 it became evident she would need help in meeting the growing demand, and for the past year Dr. Ralph Sutherland has competently relieved the pressure. This year a clinic was established in residence as a convenience to this population, but, also, to reduce the load on the over-worked University nurse, Miss Bayley. Mrs. Gromoll and Miss McPhail staffed this project and saw 472 students during the two hours a day that the clinic was open (this number is not included in the above figures.)

The Counselling Service received a real blow last fall with the sudden passing of Dr. Brian O'Brien, Consulting Psychiatrist. Dr. O'Brien was entering his third year with the service and had made an invaluable contribution in his relationships with staff and students. During the past year he has been sorely missed and to date a replacement has not been found.

On the bright side, two psychologists, Mrs. Blum and Mrs. Graham, joined the staff as part-time counsellors; their presence has been a welcome addition.

But valuable as these people have been, their contribution as full-time members of staff would be even greater; limitations on financial resources make this impossible. Dr. Blum will be welcomed on a full-time basis next year; in the nursing service, Miss Bayley will be "officially" full-time, and Miss Manning will be the nurse in residence and in charge of the new infirmary. However, a full-time physician is highly desirable and very soon the same will be so for a psychiatrist.

In 1969-70 medical insurance will be required of all full-time

students. This should have two positive effects. Students will have what is believed to be necessary protection, and through making claims to insurance companies for some services rendered to students, the Health Service will receive much needed revenue. This, however, is a partial solution for only a few of the services provided can be charged against insurance.

Presently, thanks to the cooperation of the authorities within the University and the conscientious efforts of those in Counselling and Health Services, it is believed that we are meeting the health needs of our students, but more could and probably should be done. The time is approaching when a more realistic means of financing University Health programs must be found so that more students will be more productive during their university years.

NORMAN D. FENN,
Director,
Counselling and Health Services

Alumni Association

The phenomenon of university reassessment, introspection and new planning preoccupied many at Carleton during the past academic year. The Alumni Association's National Executive, under the able presidency of Mr. Charles Watt, B.A. '57, was not exempt from this exercise.

In January, a committee was appointed for the purpose of evaluating all current programs, as well as making recommendations for a more ambitious slate of activities for the Association. This committee was prompted primarily by the fact that more innovative thinking was necessary, that approximately 1,200 new and young alumni were joining the Association annually, and that there was a serious communication gap between alumni and their alma mater. In short too many alumni have graduated from an institution that no longer exists. It was felt that a new and expanded newsletter would be one way to close the gap but more was required.

The committee met several times, and the final report was directed at four audiences: the University; Alumni; Undergraduates; and the Community (not necessarily in that order!). It was felt that current programs were too narrow in their approach, that a greater variety should be offered, knowing that no alumnus could be expected to attend all functions, but that there should be something for everyone.

The suggested list of some thirty new programs placed increased emphasis on "continuing education." Rather than the traditional Carleton social approach, it was felt that the role of the Association should be expanded to include, for instance, up-dating seminars that would allow graduates in a certain field to return to the University for a weekend—to find out about the newest advances and techniques in their fields. At the same time, this meeting of alumni and faculty would create the opportunity for a certain faculty, school, or department to receive valuable feedback from graduates about the relevance of courses and degree programs.

This new program of activities promises to enhance our Association in the year 1969/70.

The National Executive considered several other items and projects during the year: a Constitution Committee appointed two years ago delivered its report; a new and expanded graduation dance was held in an effort to attract alumni, as well as graduates, and to present awards to outstanding members of undergraduate societies; Homecoming '68 was again a tremendous social success, and plans are underway for the 1969 version; the National Executive was increased to include greater participation by ex-officio members of the University community and alumni interest groups and branches who would have an interest in the affairs of the Association.

Miss Nadine Morchain, B.A. '68 has been an active Chairman of the Alumni Division of the Development Campaign.

Mr. Douglas F. Duclos, B.Com. '57, Past President, became one of three alumni representatives on the Board of Governors in the fall of 1968, when the term of Mr. John C. Clarke, B.A. '54 ended. John was subsequently appointed to the Board in his own right.

The Association was sorry to receive the resignation of Mr. Brian Blevins, B.A. '66, B.J. '67, who has served as the Executive Secretary for two years, and who has left the University for an extensive year of travel in Europe. Mr. Brian Curley, formerly of the University of Manitoba Alumni Association, was appointed in late June as the new Director of Alumni Affairs.

DONALD M. PATTISON,
for the Alumni Association

Development Office

Carleton is indeed fortunate in the number of gifts it receives each year from individuals and companies both in Ottawa and across Canada. During the last year we received 2,400 gifts totalling \$353,618.00 and also received a further 1,734 pledge payments totalling \$205,648.52.

Our active Development Program is made possible through the large number of volunteers who give profusely of their time to serve on various committees and who work as team captains and campaign volunteers.

Our Development Executive Committee, under the Chairmanship of Mr. F. K. Venables of the Board of Governors, is responsible for the co-ordination of our varied activities and committee members include chairmen of the various funds and appeals. Of particular note, is the active student, alumni and faculty participation in our numerous projects. We believe that this healthy partnership makes a contribution to the successful planning of our appeals for private support.

The following development programs were active during the last year:

THE CARLETON UNIVERSITY CAMPAIGN

By the end of June 1969 our four-year Campaign for \$3,000,000.00 had received 11,767 gifts totalling \$2,572,696.87. This is a remarkable achievement yet we must still find approximately \$427,000.00 if we are to achieve our goal and this private support to Carleton becomes increasingly important with the new Provincial Interim Capital Formula.

THE CARLETON UNIVERSITY CENTRE BUILDING FUND

This special Campaign for approximately \$250,000.00 is under the Chairmanship of Mr. Grant MacCarthy and by the end of June

1969 had received 1,190 gifts totalling \$155,851.60. A major factor in the Campaign is the high level participation of Carleton students and we have been most successful in students visiting companies in Montreal and Toronto in partnership with local businessmen. We are most grateful to Mr. Trevor Lloyd of Public and Industrial Relations Limited in Toronto and Mr. Jacques LaRiviere of Domtar Limited in Montreal who acted as Chairman for the Fund in these two cities under the co-ordination of Mr. Russ Neill, the Chairman of the Corporations Canvass.

THE FRIENDS OF CARLETON ANNUAL GIVING FUND

This special annual Fund, under the Chairmanship of Mr. Ayton Keyes appeals each year for gifts to provide scholarships and bursaries for students attending Carleton. By the end of June 1969 the Fund had received 229 gifts totalling \$7,725.00.

SCHOOL OF ARCHITECTURE FOUNDING FUND

This Fund has continued to accept gifts throughout the year in support of Carleton's new School of Architecture. By the end of June 1969 we had received 83 gifts totalling \$6,871 and, of great importance, pledges for nine annual scholarships in the School.

CARLETON SCHOOL OF JOURNALISM 25TH ANNIVERSARY FUND

This year marked the 25th anniversary of the first classes in our School of Journalism and accordingly a special appeal has been launched particularly to the communication media for funds to be applied to scholarships, bursaries and other special projects. Although the Fund is still at an early stage we have received to date 118 gifts totalling \$5,230.56 and pledges for six annual scholarships in the School of Journalism.

BEQUEST PROGRAM

Our Bequest Committee under the Chairmanship of Mr. A. B. R. Lawrence of the Board of Governors has continued its constant flow of information on estate planning to lawyers, trust officers, bankers, chartered accountants, insurance officials and others active in the estate planning field both in Ottawa and the Ottawa Valley. The Committee has recently produced a special brochure outlining sample clauses for drafting wills and codicils and this becomes an important part of the information we are able to make available. During the year visits to professional people, in the Ottawa Valley, active

in the estate planning field were made by the Development Office staff.

THE ASSOCIATES OF CARLETON

Mr. A. M. Laidlaw of the Board of Governors is the Chairman of this important group of friends of the University. This last year the Annual Meeting of The Associates was held on May 29, 1969, the eve of Spring Convocation and The Associates were honoured by the presence of Carleton's new Chancellor, the Right Honourable Lester B. Pearson. The meeting this year included a tour of the Campus, the annual business meeting, reception and dinner and discussion period between The Associates and a cross-representative section of Carleton's Faculty. Membership in The Associates of Carleton now numbers 126.

DEVELOPMENT INFORMATION

Throughout the year our Development News Bulletin was distributed quarterly to approximately 5,000 major contributors and other supporters of Carleton University. In addition a monthly "30-Day Report" was distributed to major supporters and a special Development Office Report was published each month and distributed to our Development Committee members and other volunteers and to Faculty and Administrative Officers of the University.

DEVELOPMENT OFFICE STAFF

The sudden death by a heart attack last December of Mr. Stuart B. Fraser, Assistant Development Officer, was a great shock to his many friends and colleagues. Mr. Fraser had made an outstanding contribution to our Development Program. Mr. George N. Beers was appointed on February 1, 1969 as Assistant Development Officer with special responsibility for the management of our annual giving programs. Mrs. Donna DuBreuil, Assistant Development Officer, continues to be responsible for our programs in Bequest, Foundations and Alumni Annual Giving. In addition to the many duties involved in the specific development programs outlined above, the Development Office staff continues to be active in counselling and working with individual members of the Faculty, and Faculty Departments etc. in securing special grants for new programs and research projects.

As we have said earlier in this report all of this program is made

possible only through the interest, support and aid we receive from Carleton's many friends and supporters.

MICHAEL D. ROBERTS,
Development Officer

Information Office

The program management orientation of the Information Office, begun a year ago, is beginning to take shape. The office has been re-organized into a News and Events Bureau, Features Bureau and a Publications Bureau. There are still a few areas of responsibility that do not fall under these general headings but we plan to have these sorted into program areas over the next year.

The first steps have also been taken to organize the budget to fall in line with the program system. We will be working this system on a user-trial basis for the 69/70 year and then will make final adjustments in time for the next fiscal year.

Within the individual program areas we have been able to analyze our results more accurately than in the past and therefore can direct our work to specific weak areas by semi-annual assessments. An example of this type of assessment is the News and Events survey we did half-way through the year. This survey gave us a numerical, geographical and subject breakdown of news coverage across Canada for the period and included both news released from the office and news that originated without the assistance of press releases. Using such a survey we can then pick areas of emphasis for the next half-year, and relate them to the broader university objectives.

Within the Features Bureau, we have spent more time over the past year in research and organizing our approaches to the job than in producing material for major publications and network television and radio. However, this has now begun to pay off with a proposed national magazine article on an unusual lecture method by a member of the Biology Department; a series of lengthy interviews on campus with a network television producer; and the commitment of a movie studio and national association for a film on child development, to be produced in conjunction with the Department of Psychology.

The newest bureau in the office is the Publications Bureau. As

mentioned in my report last year, this bureau seemed to be the next logical step in development of the office's services for the university community. Mr. Donald Pattison, who headed the News and Events Bureau over the past year has taken over the Publications Bureau and will be meeting various university officers during the year to offer assistance in the planning and production of their publications. Such centralization will give the university a more common graphic "look" and at the same time should provide savings of considerable money and effort by academic administrators. As the bureau becomes organized, Mr. Pattison will be able to take on larger numbers of publications. In the meantime, more emphasis will be placed on using the "in-house" graphic services and in gearing publications to specific rather than general purposes. As in the other bureaus the Publications Officer will make twice yearly reports and recommendations on improvements in his area.

The radio and television area mentioned in last year's President's Report, has been moved down on the list of priorities this year because of a lack of staff to handle the job properly, and because of the emergence of the need to have a thorough look at internal communications at Carleton.

During the past year in Canada, there have been a number of disruptions on university campuses. I don't think that it would be too far off to say that a part of the cause of these disruptions is an inadequate internal communications system. It is very easy in a period of prolonged and rapid expansion to neglect the role of internal communications.

We feel that in order to help avoid such disruptions, or at least avoid the possibility of their being founded on a lack of accurate information, we need to study the present system of internal communications at Carleton. Perhaps we will be able to make specific recommendations that will help the orderly flow of important information up, down and sideways through the university structure. This internal study began in the closing months of the year and should be completed by the beginning of the coming year. All one can say at the moment, after a large number of interviews at various levels is that the systems for passing information have not kept pace with the growth in numbers at Carleton and the increasing complexity of administration. We hope that this study will improve the present systems and to a large degree solve the problems of misinformation, timing and sense of participation in the government of the university.

In the Spring, after nearly two years in the office, Chris Jermyn left to work for the *Ottawa Journal*. Mr. Jack Danylchuk who had worked for the *Journal* during the year and was a Carleton student as well, joined the office to take over as head of the News and Events Bureau, replacing Mr. Donald Pattison who had moved to the Publications Bureau.

GUY R. SIMSER,
Acting Information Officer

Report of the Bursar

About twenty years ago, the University appointed its second Bursar with responsibility for accounting and stewardship of its funds and resources. In the intervening years, this role has not changed, but the complexity and size of the job has.

Twenty years ago Carleton was located on First Avenue in the Glebe, and the property consisted of the Ottawa Ladies' College. The first of four houses had been acquired recently for use as a Students' Union. There were 572 full-time students in the day division and 604 part-time students in the evening division.

Twenty years ago there were 38 faculty and about 40 administrative staff. The current expenditure for the year was \$233,000. The value of the property was recorded as \$422,000.

The number of veterans coming to the College as students was decreasing. The College was operating under Letters Patent as a company without share capital. There were no provincial grants so that its revenues were dependent on fee income and what it could raise through gifts. I suppose that to some people the basic question was whether or not Carleton had a future, but we were so busy with problems and plans that the question was not raised. A case for Provincial financial support was prepared and presented; the preliminary discussions and presentations which resulted in the Carleton College Act 1952 were taking place; the first steps leading to the construction of a library adjacent to the main building were taken; and the College was wondering what to do with the 37-acre parcel of land donated the year before for a new campus.

There was very little formal organization and really no administrative specialists or professionals. The community was small enough so that it was possible to know all of the members. There was very little legislation which affected the University specifically, no Department of University Affairs, and few staff welfare plans, so that record-keeping was at a minimum and could be done by hand.

Now, twenty years later, the University has two campuses. St. Patrick's recently acquired, has six acres and five buildings, and the Rideau River Campus has 136 acres and 20 buildings.

Many of the problems we face are similar to the problems of an urban municipality of the same size. Construction and maintenance of sidewalks and roads, sewer and water lines, electrical distribution systems with all of the regulatory systems necessary for their operations are examples of this. In addition, many of our duties are similar to commercial property managers in that we are responsible for keeping the buildings in good repair, cleaned and serviced. Since many require sophisticated electrical and mechanical systems which must work twenty-four hours a day, seven days a week, a complicated control system has been installed to monitor these operations. As well, it is necessary to maintain a constant physical watch on all of the property for fire and other hazards to the safety of persons and property. To do all of these things, it is necessary to have a maintenance staff which includes almost all of the types of tradesmen. The equipment and facilities are also many and varied. The University now has maintenance shops for electricians, plumbers, steamfitters, locksmiths, automobile mechanics and gardeners. There is a central boiler plant which has three boilers, the necessary control systems, and an emergency stand-by electrical generator. To maintain the campus and to move equipment and personnel around, the University owns 20 vehicles and these range from such specialized vehicles as snowploughs, graders and street-cleaners, to trucks of varying types and passenger cars.

In this role of housekeeper for the University there is, in addition to the responsibilities of municipal administration and property management, another feature, and that is the managing of the various business operations and service agencies of the University. These business operations have encompassed such activities as the University Bookstore, parking lots, and the residences and cafeterias when they are not in use during the term. The service departments are the mail services which in the last year handled approximately 3,600,000 pieces of mail, the Multilith Department which consumed 37 tons of paper, the Purchasing Department, the Personnel Department, and the Instructional Aids Department.

As well as the specialists and professionals already mentioned, the Bursar's office includes accountants, payroll clerks, fee clerks and bookkeepers, who in the last year had to budget, account, disburse and record: current expenditures of \$15,000,000; capital expendi-

tures of \$9,000,000; research grants of \$1,000,000; and an endowment of \$1,350,000. The net value of the plant now is \$60,000,000.

To bring that last sum from \$422,000 of 20 years ago has meant the development of a professional staff—an architect, planners, an interior designer, engineers, and draftsmen to assist in the many aspects of the physical planning and construction on the campuses.

From the dozen or so people of twenty years ago, the staff of the Bursar's Office has grown to 320 and this does not include the contract people who do the cleaning of the buildings and the catering staff who provide the food services.

While just trying to handle this kind of growth has been demanding in itself, many other changes have taken place.

The first of these is the increase in the quantity and sophistication of research by faculty, and in both the new Faculty of Graduate Studies and in the undergraduate program. These factors have produced correspondingly sophisticated laboratory facilities in all of the faculties. In addition to the direct support from technical staff, an up-grading in the quality of maintenance services has become necessary as has an increase in the kinds of accounting to service the various forms of research grants.

I suppose the marked change that we are faced with is the character of the student body. The fact that it is eight to nine times larger than it was has forced an impersonalization in the operations which seems impossible to avoid in spite of our best efforts. While change in size may be one of the causes, it is not the whole story.

Twenty years ago, universities were critics of Society, accepting this as a responsibility and in turn accepted as such (not that there wasn't some counter criticism at that time). Now on the part of some students and a few of the faculty, the University has become part of, or perhaps indeed, The Establishment, with its servants to be treated with distrust and suspicion. I find it difficult to believe that I have become a tame tool of The Establishment, brainwashing the younger generation into unthinking cogs in some giant machine, and even more difficult to believe that this tough, resilient, younger generation are susceptible to any brainwashing techniques.

Significant as this attitude may be in some ways, it has not been significant in number. We, in this office, have a wealth of experience with both faculty and students on committees and individually which has been useful and rewarding. The problems that are faced are often difficult and sometimes there seems to be no good solution, but the process is rewarding and the challenges exciting. Occasionally

the fresh insight of a member of the community whose nose is not so close to our grindstone provides a solution to one of our problems; more usually essential assistance is provided in reaching a reasonable compromise between all the conflicting forces.

There is another significant aspect to our work, which has changed dramatically, and which arises from the advent of massive government financial support of universities. Each new and revised program usually means technical negotiation with government officials before and/or after the policy statement, analysis and interpretation of the regulations, adjustments in record keeping and reports, and the necessary action to secure the maximum benefit consistent with all the other restraints. With the adoption of the new interim capital allocation formula by the provincial government, the fourth change in as many years, we are presented with yet another such test.

When I began this report, I used as a point of reference the year the second Bursar was appointed. My resignation has been accepted but its effective date lies in the next year. As the time approaches for me to lay down my responsibilities I want to record my warmest thanks to all my colleagues with whom I have shared the rewarding adventure that has been Carleton. I want also to record my regret that the changes in relationship with students, and to some extent with faculty, have reduced these psychic rewards recently and prospectively to such an extent that I no longer want to have a direct part in the University's future. This regret is the greater since I still believe that the people are much the same and that today's problems are as capable of solution as yesterday's, given a reasonable measure of patience, understanding and trust.

On the following pages are the balance sheet of the University as on June 30, 1969, the summary statement of income and expenditure for the year 1968-69, and a statement of benefactions received in this past year.

F. J. TURNER,
Bursar

CARLETON UNIVERSITY

(Incorporated without share capital under the laws of Ontario)

BALANCE SHEET — JUNE 30, 1969 (with comparative figures at June 30, 1968)

	ASSETS	1969	1968
CURRENT FUNDS:			
Cash		\$ 3,537	\$ 583,982
Temporary investments		2,400,000	—
Accounts receivable (note 1)		289,506	269,638
Bookstore inventory, at cost		160,209	116,042
Prepaid expenses and supplies		121,145	108,915
Mortgages receivable—faculty		257,196	145,921
Due from endowment, plant and loan funds		25,809	824,324
		<u>3,257,402</u>	<u>2,048,822</u>
Deficit		47,920	539,607
		<u>\$3,305,322</u>	<u>\$2,588,429</u>
ENDOWMENT FUNDS:			
Investments, (note 2) (quoted market value 1969, \$1,100,862; 1968, \$1,056,631)		\$1,069,122	\$1,015,864
Accrued interest on investments		9,145	9,253
Other investments, at par value		300,000	—
Due from trustee		3,950	3,913
		<u>\$1,382,217</u>	<u>\$1,029,030</u>
PLANT FUNDS:			
Mortgage receivable		\$ 5,350	\$ 458
Property, plant and equipment, at cost (notes 3 and 4)		64,029,879	51,809,973
Due from current funds		458,605	—
		<u>\$64,493,834</u>	<u>\$51,810,431</u>
LOAN FUNDS:			
Cash		\$ 1,188	\$ 900
Loans receivable		149,566	205,426
Investments (note 2) (quoted market value 1969 \$114,833; 1968, \$111,292)		104,687	99,922
		<u>\$ 255,441</u>	<u>\$ 306,248</u>

	LIABILITIES	1969	1968
CURRENT FUNDS:			
Bank advances		\$ 121,993	\$ —
Accounts payable and accrued liabilities		1,374,132	1,641,749
Unexpended specific research grants		612,723	430,943
Deferred academic fees		206,727	162,485
Deposits on residence accommodation		46,100	30,342
Unexpended restricted current funds		327,425	179,570
Due to plant funds		458,605	—
		<u>3,147,705</u>	<u>2,445,089</u>
Deferred net income on ancillary enterprises (note 5)		157,617	143,340
		<u>\$3,305,322</u>	<u>\$2,588,429</u>
ENDOWMENT FUNDS:			
Due to current funds		\$ 23,800	\$ 22,772
Net profit on sale of securities		20,172	21,921
Endowment funds equity		1,338,245	984,337
		<u>\$1,382,217</u>	<u>\$1,029,030</u>
PLANT FUNDS:			
Mortgages payable (note 6)		\$ 2,820,535	\$ 2,835,170
Advances on mortgage (note 7)		2,094,628	—
Debentures payable (note 8)		36,368,798	27,294,363
Students funds held in trust—University Centre		196,959	174,628
Due to current funds		—	769,069
Plant funds equity		23,012,914	20,737,201
		<u>\$64,493,834</u>	<u>\$51,810,431</u>
LOAN FUNDS:			
Due to current funds		\$ 2,009	\$ 32,483
Loan funds equity		253,432	273,765
		<u>\$ 255,441</u>	<u>\$ 306,248</u>

F. J. TURNER—*Bursar*

A. B. LAROSE—*Controller*

CARLETON UNIVERSITY

STATEMENT OF INCOME AND EXPENDITURE AND DEFICIT

YEAR ENDED JUNE 30, 1969
(with comparative figures for 1968)

	1969	1968
INCOME:		
Student academic fees	\$ 3,723,172	\$ 3,151,783
Government grants for operating purposes		
General purpose	11,452,611	8,318,648
Interest on debentures	1,548,190	1,010,548
Miscellaneous	76,939	51,268
Sponsored or assisted research funds	1,438,745	752,215
	<u>\$18,239,657</u>	<u>\$13,284,462</u>
EXPENDITURE:		
Academic	\$ 9,533,463	\$ 7,422,179
Library	1,706,354	1,345,248
Administration	1,192,359	935,029
Operation and maintenance of property	1,833,081	1,525,982
Miscellaneous	444,924	354,705
Extraordinary	50,854	15,540
Sponsored or assisted research funds	1,438,745	752,215
Interest on debentures	1,548,190	1,010,548
	<u>\$17,747,970</u>	<u>\$13,361,446</u>
Excess of income over expenditure (expenditure over income) for the year	491,687	(76,984)
Deficit at beginning of year	539,607	462,623
DEFICIT AT END OF YEAR:	<u>\$ 47,920</u>	<u>\$ 539,607</u>

CARLETON UNIVERSITY
NOTES TO FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 1969

1. ACCOUNTS RECEIVABLE:

	1969	1968
Tuition fees	\$ 97,415	\$ 121,376
Other	232,091	178,262
	<u>329,506</u>	<u>299,638</u>
Less allowance for doubtful accounts	40,000	30,000
	<u>\$289,506</u>	<u>\$ 269,638</u>

2. INVESTMENTS:

Investments are recorded at cost except for investments donated to the University which are recorded at market value at date of acquisition.

3. PROPERTY, PLANT AND EQUIPMENT:

	1969	1968
Land and land improvements	\$ 3,184,272	\$ 1,907,880
Buildings	49,325,397	41,094,878
Equipment and furnishings	11,520,210	8,807,215
	<u>\$64,029,879</u>	<u>\$51,809,973</u>

In accordance with accepted practice, no charge is provided in the accounts for the depreciation of fixed assets.

4. OUTSTANDING COMMITMENTS:

Total expenditures at June 30, 1969 on property, plant and equipment amounted to \$64,029,879 which include all billings to that date. Commitments for further expenditures for property, plant and equipment totalled \$5,994,337 at June 30, 1969 and additional commitments of \$84,100 have been authorized since that date.

It is anticipated that the bulk of the funds to meet these commitments will be derived from the sale of debentures to the Ontario Universities Capital Aid Corporation.

5. DEFERRED NET INCOME ON ANCILLARY ENTERPRISES:

	1969	1968
Parking lots	\$ 140,916	\$ 95,336
Residences	62,178	59,561
Athletics	15,015	10,172
Bookstores	(16,379)	(9,828)
Student health services	(21,020)	(9,518)
Food services	(23,093)	(2,383)
	<u>\$ 157,617</u>	<u>\$ 143,340</u>

CARLETON UNIVERSITY
NOTES TO FINANCIAL STATEMENTS
YEAR ENDED JUNE 30, 1969

6. MORTGAGES PAYABLE:

	1969	1968
Lanark and Renfrew Residences and University Commons 5½% mortgage maturing February 1, 2013, payable in monthly instalments of \$7,205 including principal and interest	\$1,355,036	\$1,361,344
Grenville and Russell Residences 5½% mortgage maturing July 1, 2016, payable in semi-annual instalments of \$39,698 including principal and interest	1,465,499 <u>\$2,820,535</u>	1,473,826 <u>\$2,835,170</u>

7. ADVANCES ON MORTGAGES:

Glengarry Residences 6¾% advances on mortgage loan to mature 50 years from date of execution of mortgage, the terms of repayment of which are not as yet determined Accrued interest on advances	\$2,056,800 37,828 <u>\$2,094,628</u>
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8. DEBENTURES PAYABLE:

5½ - 7¼% debentures maturing between July 16, 1994 and June 15, 1999, payable \$2,712,544 (including principal and interest) annually out of grants from the Province of Ontario.

9. COMPARATIVE FIGURES:

1968 Figures have been restated for comparative purposes.

BENEFACTIONS RECEIVED

Gifts and Grants for Current Operations	
Province of Ontario	\$11,133,477.00
Capital Gifts	
Building and Development Campaigns	492,852.00
Endowment Gifts	
R. Blair Fraser Journalism Memorial Award ..	2,950.00
International Affairs	50,000.00
The Pickering Fund	300,000.00
J. Lansing Rudd Estate	15,500.00
Unrestricted Gifts	
Carleton University Faculty Scholarship Fund ..	912.00
Jacob Freedman Charitable Foundation	3,048.00
Friends of Carleton	7,136.00
International Nickel Company of Canada Limited	1,460.00
Francis C. C. Lynch Estate	16,620.56
Parfield Oils Limited	945.00
Royal Bank of Canada	1,072.50
Morris Zagerman Estate	500.00

GIFTS FOR STUDENT AID

Scholarships

The Aluminum Company of Canada Limited ..	800.00
A.N.A.F. Veterans (Ottawa Unit) Centennial Scholarships	500.00
J. P. Bickell Foundation	4,500.00
Blok-Lok Limited—Architecture	250.00
Canadian Public Relations Society Centennial Scholarships	200.00
Clendinnen Scholarship in Biology	100.00
Arthur A. Crawley and Company	500.00
I.O.D.E. Lord Dundonald Chapter	100.00
William "Bill" Dumsday Memorial Scholarship ..	250.00
Engineering Institute of Canada	300.00
Gerber Baby Food Scholarships	400.00

Institute of Chartered Accountants of Ontario	300.00
International Nickel Company of Canada Limited	3,340.00
Dr. Harry Katznelson Memorial Scholarship	110.00
The Leonard Foundation	1,050.00
Maclean-Hunter Award in Journalism	1,000.00
Dr. Frederick William Charles Mohr	11,984.14
National Press Club of Canada Scholarship in Journalism	535.00
Oblate Fathers' Scholarships	4,080.00
The Ottawa Citizen	1,200.00
Professional Engineers Foundation of Canada	750.00
The Association of Professional Engineers of Ontario	500.00
James Rattray Memorial	500.00
Reader's Digest Fellowship in Journalism	1,000.00
Regent Vending Machines Limited	200.00
Regent Vending Machines Limited— Centennial Scholarships	150.00
Riddell, Stead, Graham and Hutchinson Award	500.00
J. Lansing Rudd Scholarship	300.00
Touche, Ross and Co.	250.00
Union Carbide Canada Limited	600.00
University Women's Club	600.00
Women's Residence Association Scholarship	150.00

Bursaries

Altrusa Club of Ottawa	100.00
A.N.A.F. Veterans (Ottawa Unit)	300.00
ATA Trucking Industry, Educational Foundation	1,700.00
Atkinson Charitable Foundation	5,600.00
J. P. Bickell Foundation	1,275.00
Birk's Family Foundation	2,105.00
The Corporation House Limited	250.00
Doran Bursary in Engineering	500.00
Engineers' Wives Association	400.00
C. A. Fitzsimmons and Company Limited	150.00
The Gyro Club of Canada	500.00
I.O.D.E., Arnhem Chapter	100.00
I.O.D.E., Countess of Ashburnham Chapter	100.00
I.O.D.E., Earnscliffe Chapter	250.00

I.O.D.E., Falkland Chapter	100.00
I.O.D.E., Laurentian Chapter	500.00
I.O.D.E., Shawinigan Chapter	125.00
I.O.D.E., Philemon Wright Chapter	81.78
International Business Machines	1,500.00
Hydro Electric Power Commission of Ontario ..	500.00
Knights of Pythias, Aurora Lodge #53	100.00
Lions Club of Ottawa (South) Inc.	400.00
Litton Systems (Canada) Limited Bursary ...	300.00
M. Loeb Limited—I.G.A. Bursaries	2,500.00
National Printers Limited	250.00
Charles Ogilvy Limited	1,000.00
John T. O'Manique	500.00
James H. Rattray Memorial	500.00
J. Lansing Rudd Bursary	225.00
Saga Food Service of Canada Limited	1,072.75
St. Patrick's Ladies Auxiliary	250.00
South Ottawa Kiwanis Club	500.00
South Ottawa Kiwanis Club—Ladies Auxiliary	100.00
Steel Company of Canada Limited	4,000.00
Thorne, Gunn, Helliwell and Christenson Bursary	150.00
United Appeal, School of Social Work	2,500.00
Wild of Canada Ltd.	250.00

Prizes

American Society for Metals—Engineering ...	25.00
Henry Birks and Sons, (Ontario) Limited	25.00
B'nai B'rith Awards	100.00
Brais, Frigon, Hanley, Brett, & Minty —Engineering	150.00
—Architecture	150.00
Canadian Institute of Mining and Metallurgy ..	150.00
The Chartered Institute of Secretaries	25.00
The Chemical Institute of Canada	25.00
Clarkson, Gordon & Co.	100.00
De Waan Foundation	100.00
Wilfrid Eggleston Prize in Journalism	150.00
V. A. Ewing Memorial Prize	100.00
Faculty Club Prize	25.00
Lillian I. Found Prize for Poetry	25.00

Anne Smith Freedman Memorial Prize	100.00
H. Carl Goldenberg Book Prize	25.00
National Council of Jewish Women	400.00
Alan Larocque Prize in Mathematics	30.00
Roodman Book Prize	35.00
Elizabeth White Memorial— Zoological Collection	35.00
Wild of Canada Ltd. drawing instruments	

STUDENT AID FROM ENDOWED FUNDS

Scholarships

C. A. B. Betts Memorial	450.00
Donald William Buchanan Estate	450.00
D. Roy Campbell	500.00
Jennie S. Cramm Estate	400.00
Grace J. Dobbie Estate	2,800.00
Naomi Cook Scholarship	250.00
C. V. Hotson Memorial	100.00
I.O.D.E. Duchess of Connaught (Laurentian Chapter)	350.00
Gavin Scott Macfarlane Memorial	200.00
Ottawa Woman's Club	225.00
Ottawa Women's Canadian Club War Memorial	100.00
Mercy Neil Southam Entrance	1,625.00
Edith May Stitt Estate	1,275.00
L. N. Wadlin—Mathematics	225.00
Hume Wrong Scholarships	225.00

Bursaries

R. A. Beamish	400.00
Nathan Braham Estate	300.00
Maurice Frederick Carty and Edward Godfrey Carty	600.00
Ottawa Citizen's War Service Committee	125.00
Ottawa Superfluity Shop	325.00
The Phillips Bursary	200.00
Abraham and Mary Shaffer	350.00
Edith May Stitt Estate	1,400.00
Honourable Cairine Wilson	200.00

Prizes

Dr. M. Ralph Berke, Prize in Chemistry	25.00
D. F. McKechnie, Prize in Accounting	Book Prize
Wilgar Memorial Prize in English	Book Prize
Kenneth R. Wilson Memorial Award for Journalism	300.00

F. J. TURNER,
Bursar

New Appointments

FACULTY OF ARTS

Academic Year 1969-70

Professors

- B. R. Bociurkiw, M.A. Manitoba,
PH.D. Chicago—Political Science,
Chairman of Committee on
Soviet and East European Studies
P. Clive, B.A., PH.D. London—French
Z. A. Jordan, M.A., PH.D. Poznan—
Sociology
J. Porter, B.SC., D.SC. London School
of Economics—Sociology
M. W. Thistle, B.SC., M.A. Mount
Allison—Journalism
C. G. Williams, B.A. Cardiff,
B.C. Carmarthen, M.A. Wales—
Religion

Associate Professors

- W. Amtmann, B.MUS. Toronto,
M.MUS. Rochester,
D.MUS. Strasbourg—Music
A. Bergens, B.S., M.A., PH.D. Columbia
—French
D. Chung, B.A. Doshisha,
B.D. Toronto, PH.D. Yale—
Religion and History, St. Patrick's
College
R. J. Jackson, B.A., M.A. Western,
D.PHIL. Oxford—Political Science
R. M. Knights, B.A. Western Ontario,
PH.D. Minnesota—Psychology
A. J. Little, B.A. Nottingham, M.COM.
PH.D. Melbourne—Economics,
St. Patrick's College
B. F. Mogridge, B.A., M.A. Cambridge,
Diplômé du Collège d'Europe,
Bruges—German
G. Picot, agregation—French
S. Sarkany, L.ÉL. Budapest, Dip. Ed.
Pol. Paris, D.U. Strasbourg—French

- B. H. Taylor, B.A. Sir George
Williams, M.A. Montreal—
Journalism
P. J. Williams, B.A., M.A. Cambridge
—Geography

Assistant Professors

- E. Barrett, B.A. Memorial,
M.A. Alberta—English
M. D. Bordo, B.A. McGill,
M.SC. London School of Economics
—Economics
J. A. Brook, B.A., M.A. Alberta—
Philosophy
C. M. Brown, B.A. Harpur,
PH.D. Columbia—Art
K. F. Clancey, B.SC. St. Mary's,
M.SC. Purdue—Mathematics
M. Clive, LICENCE-ÈS-LETTRES, Paris,
PH.D. London—French
B. A. Cox, B.A. Reed College,
M.A. Oregon, PH.D. Berkeley—
Sociology
C. Cumming, B.A., B.J. Carleton—
Journalism
J. C. Danielson, B.A. San Diego,
PH.D. California—Economics
J. de Vries, B.A. Sir George Williams,
M.S. Wisconsin—Sociology
R. F. Dillon, A.B. Dartmouth,
M.S. Florida, PH.D. Virginia
Psychology
D. E. Dubrule, B.A. Cornell,
M.A., PH.D. Toronto—Philosophy,
St. Patrick's College
G. C. Eglington, B.A., LL.B. Sydney—
Law
G. F. Goodwin, B.A. Virginia—
History

A. W. Heidemann, B.A., M.A. St. Louis
—English

E. R. Kantowicz, B.A. St. Mary of
the Lake, M.A. Chicago—History

D. G. Keith, B.A. McGill,
M.A. Wisconsin—History,
St. Patrick's College

D. T. LaBelle, B.A. Massachusetts,
M.A. Chicago—History

R. B. Lovejoy, A.B. Albany,
M.A. Kentucky, PH.D. Case Western
Reserve—English

D. N. MacLeod, B.A. Seattle Pacific,
M.A. Washington—Sociology,
St. Patrick's College

D. C. McIntyre, B.S. Carroll College,
M.A. Northern Illinois—Psychology

G. McKnight, B.A. British Columbia,
M.A. McMaster—English

A. Moffitt, B.A., M.A. Western Ontario,
PH.D. Minnesota—Psychology

K. T. Molohon, B.A. Stanford—
Sociology

W. A. Oliver, B.A., M.A. Cambridge,
DOCTORAT D'UNIVERSITÉ, Laval—
French

A. R. M. Ritter, B.A. Queen's,
M.A. Western Ontario—Economics
and International Affairs

H. G. Ruprecht, D.PHIL. Saarbrücken
—Comparative Literature and
German

A. D. Steeves, B.S.A., M.S.A. Toronto,
PH.D. Michigan—Sociology and
Anthropology

R. F. Sullivan, B.A. Boston,
M.A. California—Economics

J. E. Tunbridge, B.A. Cambridge,
M.A. Cantab—Geography

R. D. Vanderberg, B.A. Wyoming,
M.S.C. Wisconsin—Economics

J. A. Vantour, B.A. Alberta,
M.A. Utah—Sociology,
St. Patrick's College

J. M. Vickers, B.A. Carleton—
Political Science, St. Patrick's
College

W. G. Webster, B.Sc. McGill,
M.A. Cornell—Psychology

M. Welsh, B.A. Capetown,
PH.D. London—Classics

V. S. Wilson, B.Sc. British Columbia,
D.P.A., M.A. Carleton—Political
Science

Lecturers

B. Medwidsky, B.A., M.A. Ottawa—
Russian

S. Robinson, B.A. Western,
M.A. Rochester, D.U. Laval—
French

K. Young, B.A. Vermont—Religion

Special Lecturers

J. P. Ryngaert, L. ÉS L., D.E.S. Lille—
French

J. Vinchon, D.U.E.L. Avignon,
L. È L. Aix—French

Visitors

J. A. Corry, LL.B. Saskatchewan,
B.C.L. Oxford, LL.M. Columbia,
Visiting Professor of Political
Science

H. Guindon, B.A., B.PH., PH.L., M.A.
Ottawa PH.D. Chicago, Visiting
Professor of Canadian Studies and
Sociology

L. T. Sanz, LIC. F. Y LET.,
DR. EN F. Y LET. Madrid, Visiting
Professor of Spanish

L. Terraux, L. ÉE L., D.E.S. Grenoble,
D. ÉS L. Paris, Visiting Professor
of French

S. Kumon, B.A., M.A. Tokyo, Visiting
Associate Professor of Economics

SCHOOL OF SOCIAL WORK

Academic Year 1969-70

Assistant Professors

D. D. Akman, B.Sc. Montreal, M.A.
Pennsylvania

F. A. Fuerst, B.S.W., M.S.W., M.A.
Manitoba

T. R. Pugliese, B.A. Western,
M.S.W. Ottawa

Instructors

D. G. Cullen, B.A. Toronto, M.S.W.
Ottawa—Social Work Practice

R. M. Hart, B.A. Saskatchewan,
DIP.L. S.W. Toronto—Social Work
Practice

FACULTY OF SCIENCE

Academic Year 1969-70

Professors

V. Dlab, RNDR., C.SC. Charles,
PH.D. Khartoum, D.SC. Charles—
Mathematics

Associate Professors

- R. L. Brown, B.SC. McGill,
PH.D. Edinburgh—Geology
J. Walters, B.SC., PH.D. Imperial
College—Physics

Assistant Professors

- G. R. Carmody, A.B., PH.D. Columbia
—Biology
K. F. Clancey, B.SC. St. Mary's,
M.SC. Purdue—Mathematics
F. Giesbrecht, B.S.A. Manitoba,
M.S., PH.D. Iowa State—
Mathematics
M. Helfenstein, B.SC. Alberta—
Mathematics
R. J. Loy, B.SC. Melbourne,
M.SC., PH.D. Monash—Mathematics
P. B. Read, B.A.SC., M.A.SC. British
Columbia, PH.D. California—
Geology
A. Shafaat, B.SC. Pakistan,
M.A. Punjab, PH.D. Australian
National—Mathematics
J. Sinclair, B.SC. Edinburgh,
PH.D. East Anglia—Biology
P. Tan, B.SC. Sun Yat Sen, B.A. Luther
College, M.A. Saskatchewan,
PH.D. Toronto—Mathematics
D. C. Wigfield, B.SC. Birmingham,
PH.D. Toronto—Chemistry

Lecturers

- M. I. Wilkinson, B.SC. Graduate
Certificate in Education, Leeds—
Chemistry

FACULTY OF ENGINEERING

Academic Year 1969-70

Associate Professors

- J. Kirkhope, B.SC. Royal College
of Science and Technology, B.SC.
Strathclyde, Post Graduate diploma
McGill

Assistant Professors

- A. N. Abdelhamid, B.SC., M.SC. Cairo
S. G. Haider, B.SC. West Pakistan,
M.S., B.ARCH., PH.D. Illinois
A. M. KHAN, B.E., M.E. American
University of Beirut
R. E. Thomas, B.SC. New Brunswick,
PH.D. London, D.I.C. Imperial

Research Engineers

- G. Burbridge, B.ENG., M.ENG. Carleton
W. R. Davis, B.ENG., M.ENG. Carleton

SCHOOL OF ARCHITECTURE

Academic Year 1969-70

Associate Professors

- D. Moizer, B.ARCH. Birmingham
H. N. Sharon, B.ARCH. Bucharest

LIBRARY

Academic Year 1969-70

- P. K. G. Filotas, B.A., L.B.S. Toronto
—Foreign Language Cataloguer
S. A. Horn, B.A. Victoria, B.L.S.
Toronto—Cataloguer
J. M. Leonardo, B.SC. McGill,
B.L.S. Toronto—Science/
Engineering Librarian
A. L. Liros, B.A. Sir George Williams,
L.B.S. Toronto—Cataloguer
S. E. Manion, B.A. Carleton,
B.L.S. Toronto—Cataloguer
K. M. McColgan, B.A. Toronto,
B.L.S. Ottawa—Cataloguer
D. Thomson, B.A. Queen's, B.L.S.
Toronto—Interlibrary Loans
Librarian

ADMINISTRATION

Academic Year 1969-70

- G. N. Beers—Assistant Development
Officer
D. Blum, B.A., M.A. British Columbia,
PH.D. Ottawa—Counsellor,
Counselling and Health Service
J. G. Coates, B.A. Sir George
Williams, M.A. McGill—Overseas
Students' Advisor
B. P. Curley—Director of Alumni
Affairs
J. Danylchuk—Information Assistant
P. Edwards, B.A. Western—Assistant
Director of Athletics
J. I. Jackson, B.A. British Columbia,
M.F.A. Iowa—Registrar
J. Murray, B.A. McMaster, M.A.
Carleton—Assistant to the Registrar
W. Pickett, B.SC. British Columbia,
M.SC. Carleton—Statistician,
Registrar's Office
J. D. Proctor, B.SC.ENG. Queen's—
Computer System Programmer
D. A. Thomas—Programmer,
Scientific Application Group,
Computing and Data Processing
Centre

Changes in Status

- J. M. Gripton, Associate Professor of Social Work, appointed Assistant Director of the School of Social Work
- A. B. Larose, Controller of the University appointed Bursar
- G. C. Merrill, Associate Dean, Division II, Faculty of Arts appointed Dean of the Faculty of Arts (responsible for Division II of the Faculty)
- J. Ruptash, Dean of the Faculty of Engineering appointed Dean of the Faculty of Graduate Studies
- A. T. Tolley, Associate Professor of English appointed Associate Dean of the Faculty of Arts (responsible for Division I of the Faculty)
- D. A. George, Professor of Engineering appointed Dean of the Faculty of Engineering

Promotions

Academic Year 1969-70

From Associate Professor to Professor

- E. M. Kushner—French
- M. LaFrance—English
- P. D. McCormack—Psychology
- L. M. Read—Religion
- V. F. Valentine—Sociology
- D. R. Wiles—Chemistry
- G. J. Wood—English
- W. Wright—Engineering

From Assistant to Associate Professor

- B. C. Bickerton—History
- G. W. Bigg—Engineering
- F. W. Black—Engineering
- H. Burshtyn—Sociology
- R. L. Carson—Economics
- R. C. Elwood—History
- E. B. Fletcher—Engineering
- R. B. Goheen—History
- M. H. Gunn—English
- T. J. Henighan—English
- T. M. Hunter—History

- W. B. Kay—French
- P. Kruus—Chemistry
- A. B. Laver—Psychology
- A. D. McLay—English
- E. J. Norminton—Mathematics
- J. T. O'Manique—Philosophy, St. Patrick's College
- B. Pagurek—Engineering
- M. Rahman—Mathematics
- G. Roseme—Political Science
- P. L. Rosen—Political Science
- A. Roth—French
- T. N. Tombaugh—Psychology
- R. H. Wightman—Chemistry
- D. J. Wurtele—English
- L. D. Young—English

From Lecturer to Assistant Professor

- D. A. Beecher—English
- B. I. Egyed—Philosophy, St. Patrick's College
- C. P. Haines—Italian
- A. Halsall—French
- R. L. Hogg—English
- J. Kealey—French, St. Patrick's College
- A. MacKinnon—English, St. Patrick's College
- T. Nollet—English, St. Patrick's College

From Special Lecturer to Lecturer

- C. Fam—French

Leaves of Absence

Academic Year 1969-70

- G. S. Adam, Assistant Professor of Journalism—to pursue doctoral studies in politics at Queen's University, Kingston
- E. Bergin, Dean of Women, St. Patrick's College—to continue studies in social work at the University of British Columbia
- K. D. Bicha, Associate Professor of History—to be affiliated with Marquette University, Milwaukee, Wisconsin, and complete a book on the Bohemians in America as part of a Minorities in America Life Series

- C. Farmer, Assistant Professor of Sociology, St. Patrick's College—completing doctoral thesis in sociology at University of Aberdeen, Scotland
- J. M. Holmes, Professor of Chemistry—to accept Visiting Professorship at University of Bristol, Bristol, England
- V. N. Iyer, Professor of Biology—to carry out research on microbial genetics in the Radiobiology Laboratories of the School of Medicine at Yale University, U.S.A.
- L. Jackson, Assistant Professor of Spanish, St. Patrick's College—to pursue doctoral studies at the University of Pittsburgh; also carrying on research in Spain
- R. Jeffreys, Assistant Professor of Classics, St. Patrick's College—to pursue doctoral studies at University College of the University of London, London, England
- W. B. Kay, Associate Professor of French—to study at the Bibliothèque Nationale, in the area of 16th and 17th century French drama and poetry, especially the theatre of Jean Mairet
- E. Kushner, Professor of French—to conduct research in France into 16th century French literary theory and the life of poet philosopher Pontus de Tyard. Dr. Kushner will also deliver papers in Paris and Islamabad, Pakistan.
- M. LaFrance, Associate Professor of English—to complete book on Stephen Crane, and research and book on Evelyn Waugh at Oxford, Oxford, England
- N. H. Lithwick, Associate Professor of Economics—to carry out research on the role of structural change in economic development in Israel
- P. D. McCormack, Professor of Psychology—to accept Visiting Professorship at the University of Michigan and write up current research done at Carleton
- K. D. McRae, Professor of Political Science—to complete a comparative study of linguistic and cultural factors in five plurilingual states—Switzerland, Belgium, Finland, South Africa and Canada
- T. J. Middlebro, Assistant Professor of English—to study contemporary intellectual influences on Charles Dickens, at the British Museum, London, England
- F. K. North, Professor of Geology—to bring up-to-date a study of gravitational tectonics by visiting notable areas not previously seen at first hand; and to complete a study of the characteristics of the world's petroleum provinces according to their age
- K. Z. Paltiel, Professor of Political Science—to conduct research into the political controls of broadcasting in several countries in Europe and Asia
- T. J. Ryan, Associate Professor of Psychology—to write a report on the effects of poverty on young children. This will include (a) a review of research of the effects of early experience on later behavior—with special emphasis on poverty as an early experience; (b) a review of current compensatory education projects—with special emphasis on Canada; (c) recommendations to the Canadian government for changes in policy re: early education in this country
- D. A. Smith, Associate Professor of Biology—to continue field research work on the ecology of local small mammals, and to write up previous research work for publication
- M. G. Fry, Associate Professor of History—to study Lloyd George's foreign policy in London, England
- R. Vigneault, Assistant Professor of French—to extend Visiting Professorship at Laval University in French
- J. B. Waugh, Associate Professor of Accounting—to continue doctoral studies in business administration at University of Washington, Seattle

Resignations

Academic Year 1969-70

Faculty

- J. P. Fletcher, Assistant Professor
of Biology
- W. Fobes, Assistant Professor
of Economics, St. Patrick's
College
- S. K. Ghosh, Assistant Professor of
Economics
- A. F. Gregory, Associate Professor
of Geology
- G. D. Holmes, Associate Professor
of Engineering
- S. F. Kaliski, Professor of Economics
- M. Kelly, Assistant Professor of
Social Work
- E. N. King, Assistant Professor of
Engineering
- L. Lorenzo-Rivero, Assistant
Professor of Spanish

- L. T. McDonald Assistant Professor
of Philosophy,
St. Patrick's College
- L. Sauvé, Assistant Professor of
Mathematics, St. Patrick's College
- M. E. Tanton, Assistant Professor
of Social Work

Retirement

Academic Year 1969-70

- G. N. Dowsett, Assistant Professor
of Religion, St. Patrick's College
- E. J. Watson, Associate Professor of
Philosophy, St. Patrick's College

Deceased

- S. B. Fraser, Assistant Development
Officer

Research

DIVISION I

FACULTY OF ARTS

Art

M. FUNKE

Publications and Papers

"Universities Art Association",
Artscanada, Toronto, October-
November 1968, issue 122/123,
pp. 53-54

"Impressionism in Art and Some
Observations on the Music of
1870-90", Talk given at Art Gallery
of Ontario, February 12, 1969

Honours and Activities

Secretary-Treasurer, Universities Art
Association of Canada, 1967-69

Member of Advisory Committee on
Visual and Creative Arts, School
of Applied Arts, Algonquin
College, Ottawa

Classics

D. G. BEER

Research

Continuing research on doctoral dis-
sertation for University of
Toronto, "Dramatic Use of Cult
and Ritual in Aeschylus"

A. FOTIQU

Research

A critical edition of a VIth Century
Greek dialogue "On Political
Science"

A study of the historic and literary
traditions in order to establish the
sources and the originality of the
anonymous VIth Century dialogue
"On Political Science"

A. TREVOR HODGE

Research

The campaign of Marathon
Design and construction in classical
Greek architecture

Publications and Papers

"Some Notes on the Temple of
Nemesis at Rhamnous",
American Journal of Archaeology,
Vol. 73, No. 2, April, 1969,
pp. 185-193, (with R. L. Tom-
linson, University of Birmingham)

"Deliberate Carelessness in Classical
Greek Architecture", paper
presented to the Annual Congress
of the Archaeological Institute of
America, Toronto, 29 December,
1968

M. E. WELSH

Research

The text and transmission of Aquila
Romanus and Rutilius Lupus
Rhetoric and responsibility in
antiquity

English

V. K. CHARI

Publications and Papers

"The Question of Form in Thoreau's
*A Week on the Concord and
Merrimack Rivers*," *Indian Essays
in American Literature* (Papers

of honour of Robert Spiller),
American Studies Research
Centre, Bombay, 1968, pp. 99-112

C. HAINES

Publications and Papers

"Reality and Authority: *Hamlet*
and *Measure for Measure*", lecture
given at the Monday Club,
Ottawa, 24 March, 1969

Honours and Activities

Attended Seventh Triennial
Conference of the International
Association of University
Professors of English as a guest
of the Association, Dublin,
Ireland, 19-24 August, 1968

M. LaFRANCE

Research

A critical study of Stephen Crane

Publications and Papers

"The Ironic Parallel in Stephen
Crane's 1892 Newspaper
Correspondence", *Studies in Short
Fiction*, VI (Fall, 1968), 221-222

Honours and Activities

Awarded Canada Council Leave
Fellowship for 1969-70 for
research toward a critical study of
Evelyn Waugh

R. G. LAIRD

Research

Continued work on dissertation on
Richard Henry Horne for Yale
University

C. R. LEVENSON

Publications and Papers

Cairns (a book of poems), Chatto
and Windus, London, 1969,
64 pp.

Poems in: *Malahat Review*, No. 10,
April, 1969, p. 59 and *Micromegas*,
Vol. III, No. 1, pp. 30-32

Translations in *Agenda*, Vol. 6,
Nos. 3-4, Autumn-Winter, 1968,
pp. 41, 51-53

Review of Norman MacCaig *Rings*
On a Tree in *Agenda*, Vol. 7,
No. 2, Spring, 1969, pp. 90-92

R. L. McDUGALL

Research

Biographical article on Alexander
Harris (1805-1874) for *The
Dictionary of Canadian Biography*

Publications and Papers

Bulletin No. 6, Association for
Commonwealth Literature and
Language Studies. (with Robin
Mathews). Carleton University,
1969, 34 pp.

Honours and Activities

General Editor, *Carleton Library*

Chairman, Association for
Commonwealth Literature and
Language Studies, 1968-71

Member, Commission on Under-
graduate Teaching and Learning

Member, Long Range Planning
Committee, Diocese of Ottawa

Elected Visitor, Institute of
Commonwealth and Comparative
Studies, Queen's University

A. T. TOLLEY

Research

English Poetry in the Nineteen-
thirties

Publications and Papers

"The Thirties Poets at Oxford",
University of Toronto Quarterly,
XXVII, 4 (July, 1968), 338-358

French

A. ELBAZ

Honours and Activities

Faculty Advisor to Overseas Students,
Carleton University

Awarded Certificat d'Aptitude
pedagogique à l'enseignement
secondaire, Paris, May, 1969

Member, CUSO Selection Committee

M. GAULIN

Research

Le concept de "l'homme de lettres"
en France au XVIII^es

Textual problems in Montesquieu's
Lettres persanes

Various aspects of the French-
Canadian novel

Publications and Papers

"Louis Hémon: *Lettres à sa famille*",
Etudes littéraires August 1968,
vol. 1, no. 2, pp. 309-311

"Yvette Naubert: *L'Eté de la cigale*",
Livres et auteurs canadiens 1968,
1969, pp. 35-37

"Jean Tétreau: *Volupté de l'amour*",
Livres et auteurs canadiens 1968,
1969, p. 54

"La Contestation religieuse dans le
roman canadien-français", Société
d'études et de conférences, Ottawa,
22 January, 1969

"Le Prix du Cercle du livre de
France 1968", Alliance française
d'Ottawa, 3 February 1969

Interview on Gabrielle Roy's *La
Petite Poule d'eau*, "Cours
universitaires", Radio-Canada,
15 February, 1969

Honours and Activities

Carleton representative, Woodrow
Wilson National Fellowship
Foundation

C. D. HÉRISSON

Research

Mérimée: Le roman et l'histoire
Rimbaud et Verlaine: influences
réciproques

Publications and Papers

"L'Imagerie antique dans les
Fleurs du Mal", Actes du Colloque
de Nice sur Baudelaire, *Annales
de la Faculté des Lettres et
Sciences Humaines de Nice*,
no. 4, deuxième trimestre 1968,
Paris, Minard, 1969, pp. 99-112

"Prosper Mérimée, Romans et
Nouvelles", *Etudes Littéraires*,
Decembre 1968, vol. I, no. 3, Les
Presses de l'Université Laval,
pp. 434-437

"A travers les Siècles, An Anthology
of French Literature", *The
Humanities Association Bulletin*,
Winter 1969, Vol. XX, no. I,
pp. 84-85

"A propos des *Lettres inédites aux
siens*. Quelques Aspects de la vie
de Baudelaire de 1839 à 1842."
Revue des Sciences Humaines,
Fasc. 133, janvier-mars 1969,

Faculté des Lettres et Sciences
Humaines de Lille, pp. 57-71

W. KRYSINSKI

Research

André Gide les problèmes de la
technique romanesque

Publications and Papers

"La littérature comparée au Canada:
perspectives et problèmes",
Congress of the Canadian
Comparative Literature Association,
York University, Toronto
12 June, 1969

E. KUSHNER

Research

L'univers religieux de François
Mauriac

Pontus de Tyard: l'homme et l'oeuvre
The concept of invention in 16th
century literary theory and practice
The Orpheus myth in Renaissance
and modern literature

Publications and Papers

"Observations complémentaires en
réponse à Alain Bosquet", Colloque
Saint-Denis-Garneau, Université
de Montréal, 19 October, 1968

"*Le Solitaire Premier* de Pontus de
Tyard: essai d'interprétation",
French 2 (16th century), Modern
Language Association of America,
New York, 29 December 1968

"Signes", *Poètes du Québec*, Paris,
Editions de la Revue Moderne,
p. 98

"Sartre et Baudelaire", *Actes du
Colloque de Nice sur Baudelaire*,
*Annales de la Faculté des Lettres
et Sciences humaines de Nice*,
no. 4, 2e trimestre 1968, pp. 113-124

"Réflexions sur le rôle d'Orphée et
quelques écrivains de la Renais-
sance", University College,
University of Toronto, 4 March
1969

Rina Lasnier, collection "Poètes
d'aujourd'hui", Paris, Seghers,
1969, 189 pp.

"Paul Wyzcynski: Emile Nelligan",
Livres et auteurs canadiens 1968,
Montréal, 1969, pp. 126-128

"Comparative Literature in Canada",
*American Comparative Literature
Association Newsletter*, no. 1,
Spring 1969, pp. 12-17

"From Belgrade to Toronto",
opening address, first congress
of the Canadian Comparative
Literature Association, York
University, Toronto, 11 June, 1969

Honours and Activities

Member, Humanities Research
Council of Canada

Chairman, *ad hoc* Committee for
the organization of the Canadian
Comparative Literature Association

Organizer, 1st congress of the
Canadian Comparative Literature
Association, York University,
Toronto, 11-13 June 1969

Poetry recital, Société des écrivains
canadiens, Ottawa University,
2 December, 1968

Awarded Canada Council Leave
Fellowship for 1969-70

Awarded Humanities Research
Council of Canada travel grant
to attend the congress of the
Fédération internationale des
Langues et Littératures modernes
in Islamabad, Pakistan

Television course in French
Canadian Literature, (Saint-Denys-
Garneau and Gabrielle Roy),
Commission interuniversitaire des
cours télévisés et radiodiffusés des
universités de langue française,
with the Canadian Broadcasting
Corporation, 1968-69

A. ROTH

Research

Completion of doctoral dissertation,
"Erckmann-Chatrian, écrivains
du peuple," University of Western
Ontario, September, 1968

Honours and Activities

Canada Council Research Grant to
establish chronology of Erckmann-
Chatrian's works, April, 1969

"Erckmann-Chatrian", public
lecture, University of Western
Ontario, 15 July, 1968

"Romain Rolland et Jean-Christophe",
talk to students of Conservatoire
de Musique, Hull, 8 April, 1969

J. S. TASSIE

Publications and Papers

"Commentaire sur la conférence de
Luc Lacourcière", *Nelligan, poésie
rêvée, poésie vécue*, Cercle du
Livres de France, Montreal, 1969,
pp. 55-58

"Les Etudes canadiennes-françaises
à l'Université Carleton", paper
read at Colloquium on Research
and Teaching in French-Canadian
Literature, University of Ottawa,
October 26, 1968

Honours and Activities

Secretary, Association des chefs des
départements de français des
universités de l'Ontario

Member, Scholarships Selection
Committee, Association of
Universities and Colleges of
Canada, Ottawa, January 15 & 16,
1969

Member, Scholarships Selection
Committee, Canada Council
Cultural Exchange Program,
Ottawa, March 19, 1969

E. N. ZIMMERMAN

Research

Research on J-P Sartre as a disciple
of Marcel Proust

Guillaume Apollinaire's "Les
Fenêtres"

Literary studies in Marcel Proust

German

J. GOHEEN

Research

Continuing research on "Time and
Tense in Thomas Mann's novel
Dr. Faustus"

Publications and Papers

"Tempusform und Zeitbegriff in
R. M. Rilkes 'Die Aufzeichnungen
des Malte Laurids Brigge'"

Honours and Activities

Awarded Canada Council Research
Grant, 1969, to study the poetic
image of women in late Medieval
German literature

E. M. OPPENHEIMER

Honours and Activities

Treasurer of the Canadian-German
Academic Exchange Association

History

J. G. BELLAMY

Research

History of Medieval Treason

The Origins of Impeachment

Public Order in the Fourteenth
and Fifteenth Centuries

Arbitration in Disputes in Fifteenth
Century England

Honours and Activities

Awarded a Canada Council Research
Grant, Summer, 1969

K. D. BICHA

Research

A history of the Czech community
in Chicago, 1850-1914

Publications and Papers

"The Settlement of Czechs in
Wisconsin," *Wisconsin Magazine
of History*, Vol. 52, Summer, 1969

D. G. BOWEN

Research

The Age of Intelligent Nepotism. A
Study of the Primacy of Lord
John George Beresford,
Archbishop of Armagh, 1822-1862

Publications and Papers

Regular columnist, *Canadian
Churchman*, Toronto, Canada

Series of twenty public lectures,
Ottawa Lay School of Theology.

"The Christian Church and Culture",
Chalmers United Church and St.
John's Anglican Church,
September 1968 to March 1969

"The Role of the Clergy in the West
of Ireland During the Great
Famine", Canadian Society of
Church Historians, York
University, Toronto, June 9, 1969

"The Context of Liturgy: Here and
Now, There and Then". Discussion
with Martin Marty, Worship '69

Conference, Ottawa University,
June 24, 1969

Honours and Activities

Awarded Canada Council Research
Grant, Summer, 1969

R. T. CLIPPINGDALE

Research

Continuing research and writing on
a doctoral dissertation for the
University of Toronto: "J. S.
Willison, Political Journalism:
From Liberalism to Independence,
1881-1905"

Publications and Papers

"J. S. Willison and Canadian
Nationalism, 1886-1902", paper
read at the meetings of the
Canadian Historical Association,
York University, Toronto,
June 5, 1969

J. N. COOPER

Research

Continuation of doctoral thesis for
Harvard University "The Back-
ground of Militant Dissent:
1832-1841"

Honours and Activities

Assistant Editor, *Histoire
Sociale/Social History*

G. S. COUSE

Honours and Activities

Clerk of the Senate

R. C. ELWOOD

Research

Completion of doctoral dissertation
for Columbia University, "The
RSDRP in the Underground: A
Study of the Russian Social
Democratic Labor Party in the
Ukraine, 1907-1914," January 1969

Compilation of a documentary
history of the Communist Party
of the Soviet Union (with
R. H. McNeal)

Publications and Papers

Slavs in Canada, Vol. II: *Proceedings
of the Second National*

Conference on Canadian Slavs,
Toronto, 1969 (edited with
J. W. Strong and C. Bida),
pp. 288

D. M. L. FARR

Publications and Papers

"The Task of the College of Applied
Arts and Technology", Fanshawe
College of Applied Arts and
Technology, London, Ontario,
1 August, 1969

Honours and Activities

Member, Advisory Council on
Public Records, Government of
Canada

Member, Historical Advisory
Committee, National Capital
Commission

Member, Special Subcommittee on
Assessment of Graduate and
Research Library Requirements,
Committee of Presidents of
Universities of Ontario

Representative of the Canadian
Historical Association, Social
Science Research Council of
Canada

Awarded Canada Council Leave
Fellowship for 1969-70

M. G. FRY

Research

Completion of book to be entitled
"Illusion of Security: North
Atlantic Diplomacy 1918-1927"

Continued preparation of book on
Lloyd George and the conduct
of British Foreign policy,
1895-1945

Honours and Activities

NATO Research Fellowship, 1968-69
Canada Council Short Term
Research Grant, 1968

Awarded Canada Council Leave
Fellowship, 1969-70

R. GLOVER

Publications and Papers

"The History of the North-West
Territories and its Preservation",
at a dinner sponsored jointly by
the N.W.T. Centennial Committee
and the N.W.T. Permanent

Committee on Museums, Historic
Sites and Artifacts, at Yellowknife,
N.W.T., on 8 May 1969

Honours and Activities

Higby Prize, American Historical
Association, 1968

P. J. KING

Research

Work on book: Utilitarian Juris-
prudence in America: The
Influence of Bentham and Austin
on American Legal Thought in
the Nineteenth Century

The Political Thought of Daniel
De Leon and the American
Socialist Labor Party, 1890-1914

H. B. NEATBY

Publications and Papers

"The Political Ideas of William
Lyon Mackenzie King", Vanier
Lecture, University of Ottawa,
December 2, 1968

"The Liberal Way: Fiscal and
Monetary Policy in the 1930s",
paper presented to Association of
Canadian-American Studies,
McGill University, October 20,
1968

F. OUELLET

Publications and Papers

"La Recherche historique au Canada
français", in L. Beaudoin (ed.),
La recherche au Canada français,
(Les Presses de l'Université de
Montréal, Montréal, 1968),
pp. 87-99

Public lecture at the University of
Toronto, "The Birth of Political
Parties in Lower Canada",
February 9, 1969

Honours and Activities

Elected Vice-President of the
Canadian Historical Association,
June 1968

Seminars at McGill University,
French Canada Studies
Programme, February 26-29, 1969

R. E. REYNOLDS

Research

Completion of doctoral thesis for

Harvard University, 1969, "Sacred Orders in the Early Middle Ages: Shifts in the Theology of the Lower and Higher Ecclesiastical Orders from Late Patristic Antiquity Through the Early Middle Ages as Reflected in the Ordinals of Christ and Related Literature"

Further Evidence on the Irish Origins of Honorius Augustodunensis

A Florilegium on the Ecclesiastical Grades in *Clm 19414*: Testimony to Ninth-Century Clerical Instruction

The Turin Collection in Seven Books: A Poitevin Canonical Collection

Publications and Papers

"*Virgines Subintroductae* in Celtic Christianity," *Harvard Theological Review*, Vol. 61, No. 4, October, 1968, pp. 547-566

J. W. STRONG

Publications and Papers

"Teaching Soviet History in Canada," paper given to the North American Studies Seminar, Leningrad State University, Leningrad, U.S.S.R., 15 February, 1969

"The Sino-Soviet Border Dispute," paper given at History Meetings, Woodroffe and Lisgar High Schools, Ottawa, Ontario, 10 and 17 April, 1969

Slavs in Canada, Vol. II, *Proceedings of the Second National Conference of Canadian Slavs*, Toronto, 1969, pp. 288 (Edited with R. C. Elwood and C. Bida)

Honours and Activities

Assistant Editor, *Canadian Slavonic Papers*

Italian

C. P. HAINES

Honours and Activities

Attended meeting of Ontario Chapter of the Association of University Teachers of Italian, Guelph, 25-26 October, 1968

Journalism

G. S. ADAM

Research

Continuing work on a theoretical framework for the consideration of the mass media in Canadian society

Publications and Papers

"Judaism in a modern environment", paper presented at the Biennial Conference of the Canadian Council of Reform Congregations, Ottawa, 15 November, 1968

Honours and Activities

Guest lecturer, University of Western Ontario, Department of Journalism, March 10, 11 and 12

Three lectures:

"Elite groups and dissent in the mass media: two case studies in Canadian history"

"Political public relations as an aspect of the Canadian information network"

"The professional and political traditions in journalism"

T. J. SCANLON

Research

Study of the public relations problems of the Oblate Order for the Oblate Indian-Eskimo Council, Summer, 1968

Publications and Papers

"The Canadian Journalist", *Campus*, March 1969, p. 7

Paper, "Journalism Education: A Carleton Viewpoint", presented at Communication Arts Conference, Niagara College, Welland, March 7, 1969; published in *Canadian University*, March 1969, p. 35

Paper, "The Editor, Education, and Openness — the Role of Information in a Democratic Society", presented to the Canadian Industrial Editors' Association, Ottawa Chapter, January 23, 1969

"Role Playing Applied to Reporting Classes", *The Journalism Educator*,

Volume 23, Number 2,
Spring 1968, p. 28

"Revolution in Journalism
Education", *Canadian University*,
Volume 3, Number 4, June 1968,
p. 23

Paper, "Improving Your Role as a
Farm Journalist", presented to
the Eastern Canada Farm Writers
Association Workshop, Geneva
Park, Ontario, September 23, 1968

Paper, "The Present and Future
Role of PR in Government",
presented to the Ottawa Chapter,
Canadian Public Relations
Society, October 4, 1968

Honours and Activities

Member, Editorial Board, *The
Journalism Educator*

President, Carleton University
Academic Staff Association,
1968-69

Participated in panel to discuss
Canada's News Media at Brock
University, St. Catharines,
February 15, 1969

Member, Canadian Committee,
International Press Institute;
conducted Post-Assembly Tour,
World Assembly, International
Press Institute in Canada,
June, 1969

W. H. KESTERTON

Research

Continuing research into law and
the press in Canada

Publications and Papers

"Mass Media" Canadian Annual
Review for 1967, Toronto,
University of Toronto Press, 1968,
pp. 432-450

"The Employment of Carleton
Journalism Graduates in Relation
to the Carleton Journalism
Program," working paper prepared
for Communications Arts
Conference, Welland, Ontario,
March 7-8, 1969

P. WILSON

Honours and Activities

Attended Canadian Managing
Editors' Conference, Jasper,

Alberta, May 23-26, 1968

Attended National Communications
Conference of the Canadian
Industrial Editors' Association,
Winnipeg, Manitoba, June 11-14,
1968

Attended Publications Workshop,
University of Minnesota School
of Journalism, Minneapolis,
Minnesota, June 17-28, 1968

Philosophy

S. G. CLARKE

Research

Completed doctoral dissertation
entitled "Emotion" for Duke
University, June, 1969

Essays on emotion and the theory
of action

Publications and Papers

Paper, "Love," read for Philosophy
Club, Carleton University,
January 20, 1969

Paper, "Agent and Object," read
for graduate students and faculty
at McMaster University,
February 3, 1969

D. E. DUBRULE

Research

An edition of Nicholas of Cornwall,
In Porphyrii Isagogen Commentum

A comparison of the fourth proof
for immortality of Plato's *Phaedo*
and the "ontological argument"

Inquiry into the philosophy of the
history of philosophy

M. GLASS

Research

Continuing research for doctoral
dissertation on "Supererogation",
Queen's University, Kingston

J. W. LEYDEN

Research

Kant's treatment of time in the
Aesthetic and Analytic of
Principles of the *Critique of Pure
Reason*, and in certain "non-
Critical" writings

The development of "theoretical language" in the physical sciences

R. MARLIN

Research

Continued research on doctoral dissertation concerning punishment, responsibility and retributive justice and the study of the moral principle of "double effect", University of Toronto

Publications and Papers

Letter, "Arthur Porter and Logic", *Science Forum* 5, October, 1968, inside front cover and p. 32

R. S. TALMAGE

Research

A study of thought, cause and desire
The concepts of intention and trying

J. M. THOMPSON

Research

Tillich's concept of symbol

Honours and Activities

Member, Senate, Knox College,
Toronto

Member, Board of Education,
Presbyterian Church in Canada

Member, Committee on High Learning,
Presbyterian Church in
Canada

B. WAND

Research

Problems in the Relations Between
Law, Morality and Ideology

J. C. S. WERNHAM

Research

Historical studies in the philosophy
of religion

Religion

A. R. GUALTIERI

Research

Completed dissertation on
"Theological Evaluations by
Christians of the Religious Faith
of Non-Christians", McGill
University, 1969

Publications and Papers

"The de-Canadianization of the
University," *Canadian University
and College*, Vol. 4, No. 5,
May, 1969, pp. 3 and 60

Honours and Activities

Eight lectures at St. Paul University,
Ottawa, on the doctrine, polity
and liturgy of the United
Church of Canada, November 19-
December 10, 1968

Member of the Anglican and United
Church Union Commission on
the Church in the World

R. L. NETTLER

Research

Continuing research for doctoral
dissertation on the nature
and development of Shiah Muslim
thought from the 10th century
A.D. to the 16th century A.D.,
Institute of Islamic Studies,
McGill University

An analysis of one chapter of the
Arabic text *Fusus al-Hikam*
(Bezels of Wisdom) by the Spanish
Muslim mystic, Ibn al-Arabi (d.
A.D. 1240)

A paper on one aspect of the
religious thought of Ibn Khaldun

Continuing research into the nature
and history of mediaeval Muslim
religious thought

Publications and Papers

Paper presented before the 179th
Meeting of the American
Oriental Society, New York,
Tuesday, March 25, 1969: "A Shī
ī-Ash'ari Controversy: al-Hilli
(ʿAllāmah), Ibn Rūzbihān
al-Khunji, and al-Tustari on the
Problem of Nazar"

Talk before the Sikh Research
Society of Canada, University of
Ottawa, October 28, 1968:
"Comparative Religions, A New
Approach"

Talk before Temple Israel, Ottawa,
December 9, 1968: "Muslim
Attitudes Towards Jews in the
Middle Ages"

L. M. READ

Honours and Activities

Awarded Canada Council Leave Fellowship for 1969-70

C. G. WILLIAMS

Research

Study of some modern Christian sects

Preparation of a manuscript on "Selflessness" in the pattern of salvation: a comparison of Hinduism, Buddhism and Christianity

Publications and Papers

Crefyddau'r Dwyrain, University of Wales Press, 1968, 390 pp. & 14 plates

"Seiliau Crefyddol y Gred mewn Unoliaeth Dyn", *Efyrdiau Athronyddol*, xxxi, 1968, pp. 31-41

"The Unfeigned Faith and an Eighteenth Century Pantheologia", *Numen* xv, fasc. 3, 1968, pp. 208-217

"Celtic Religion", *Religious Studies*, Vol. 4, No. 2, 1969, pp. 283-286

Review of H. Ringgren & Å. V. Ström, *Religions of Mankind Today and Yesterday*, edit. J. C. G. Greig, trans. N. L. Jensen, 1967, in *Religious Studies*, Vol. 4, No. 2, 1969, pp. 308-311

Honours and Activities

Guest Speaker, "Prospect for Wales", St. David's Society, Galt, Ontario, 22 February 1969; Ottawa Welsh Society, 1 March 1969

Russian

G. MELNIKOV

Research

The post-Stalin period in Soviet Literature
Soviet literary policies

Publications and Papers

"Soviet literature and the Western reader," a paper given at Queen's University, March 3, 1969

"Russian and Soviet Studies at

Carleton," a talk given at Nepean High School, May 20, 1969

Honours and Activities

Assistant Editor of the Canadian Slavonic Papers, 1968-69

Represented the Canadian Association of Slavists at the IV International Congress of Slavists in Prague, August 7-13, 1968

E. STICHLING

Research

Women in the literary works of Leo Tolstoy

Recent trends and literary methods in contemporary Russian drama
Alexander Volodin and his work

Publications and Papers

"Philosopher Who Lived His Philosophy: Yuri Zhivago", a commentary, Annual Meeting of the Canadian Association of Slavists, University of Calgary, Calgary, Alberta, 14 June, 1968

"Recent Trends in Russian Drama with Special Reference to Alexander Volodin," paper, Annual Meeting of the Canadian Association of Slavists, York University, Toronto, 13 June, 1969

P. VARNAI

Research

Continuation of doctoral dissertation on Garshin for the University of Michigan, Ann Arbor

A study of society tales in the Russian literature of the nineteenth century

Spanish

R. JACKSON

Research

Studies on the Negro in Hispanic literature and civilization

Honours and Activities

Awarded Canada Council Leave Fellowship for 1969-70

Awarded Andrew Mellon Post-doctoral Fellowship for Advanced Study at the University of Pittsburg, 1969-70

J. JURADO

Research

Research on *La Poética of Ignacio de Luzán*

Publications and Papers

Pamphlet, *Fuentes griegas del De Amicitia*, Imprenta Langa y Cia. Madrid, 1969, 31 pp.

A. LOPEZ-FERNANDEZ

Research

Preparation of article "El proceso creador poético de Juan Ramón Jiménez"

Preparation of article "Tema central y desarrollo de la poesía de Carlos Bousoño"

Publications and Papers

Paper, "La crítica poética de posguerra," Ontario Chapter of the American Association of Teachers of Spanish and Portuguese, University of Western Ontario, February 22, 1969

L. LORENZO-RIVERO

Research

Compilation of "Antología de Larra"

Preparation of "Relaciones literarias de Unamuno con Larra"

Preparation of "Amistad y poesía: Neruda y Alberti"

Publications and Papers

Larra y Sarmiento, Ediciones Guadarrama, Madrid, 1968, 252 pp.

"Afinidades poéticas de Jorge Guillén con Fray Luis de León"

Cuadernos Hispanoamericanos, Vol. 77, No. 230, February, 1969, pp. 421-436

C. A. MARSDEN

Publications and Papers

Paper, "Renaissance Erudition and the Royal Entry," Symposium on Royal Entries, Toronto Renaissance and Reformation Colloquium, October 18, 1968

FACULTY OF ARTS

DIVISION II

Commerce

T. N. BREWIS

Research

A study of Canadian regional development for the United Nations under the auspices of Resources for the Future, Washington, D.C.

Publications and Papers

"Regional Economic Policies in Canada", Toronto: Macmillan, 1969, pp. 303

"Regional Disparity and Federal Expenditures". Report 1968 Conference Canadian Tax Foundation, Toronto. pp. 188-192

W. R. SCOTT

Research

Research for Ph.D. thesis for University of Chicago, "A statistical Decision Theory Model of Asset and Liability Valuation"

Publications and Papers

"A Statistical Decision Theory Approach to Asset Valuation by Accountants", paper presented to the Workshop in Accounting Research of the Graduate School of Business, University of Chicago, April 1969

Honours and Activities

Lecturer in the Extension Division course for the Society of Industrial and Cost Accountants, "An Introduction to Managerial Mathematics and Models", 1968-69

Economics

E. U. CHOUDHRI

Research

Determination of Patterns of International Trade

Publications and Papers

"Economic Determinants of

Industrial Research and Development Activity in Canada” (paper written for the Economic Council of Canada), November 1968. To be published.

H. E. ENGLISH

Research

Organized and is administering a research project on the Regulation of Telecommunications in Canada, an analysis of the telecommunications industry and the role of regulation, including an appraisal of possible changes in public policy toward the industry in the light of new technological innovations in the systems of communication and their uses. Economists and lawyers from other universities in Canada and the United States are also involved in this project.

Publications and Papers

“Canada and Wider Free Trade,” in *Beyond the Kennedy Round*, speeches delivered at a Conference held at Church House, Westminster, London on July 1 and 2, 1968, Maxwell Stamp Associates, pp. 55-64

“A New Atlantic Initiative for World Trade and Development,” in *The “Atlantic Community” Reappraised*, Proceedings of the Academy of Political Science, XXIX, no. 2, 1968, pp. 141-52

“Atlantic Free Trade Association,” Special Report in *Encyclopedia Britannica Yearbook*, 1968, pp. 212-13

“Tariffs and Trade,” in *The Canadian Tax Foundation 1968 Conference Report*, pp. 3-11

“Nixon’s Economic Opportunities,” *International Journal*, XXIV, no. 2, Spring 1969, pp. 310-26

Honours and Activities

Attended and presented a paper at Conference, Beyond the Kennedy Round, in London, England, July 1 and 2, 1968

Attended and gave a talk on trade and development at the meetings of the Committee on Atlantic

Studies in Quebec City, September, 1968

Member of the Arrangements Committee for the International Economics Association meeting in Montreal, September, 1968

Member of the Curriculum Committee on Grade XIII Economics, Ontario Department of Education

K. A. J. HAY

Research

Money and the Canadian economy
Canadian-Japanese trade relationships
Costs of Canadian teaching hospitals

Publications and Papers

“Money, Trade and Canadian-Japanese Economic Relations”, delivered to the Conference of Japanese City Bankers, Ottawa, 27 September, 1968

“Investing in Japan”, Canada-Japan Trade Council, 1968

“The Canadian Money Supply, A Secular Econometric Analysis”, paper read at the Institute for the Quantitative Analysis of Social and Economic Policy, University of Toronto, 26 November, 1968

Honours and Activities

Killam Foundation Grant (in association with G. Rosenbluth and P. A. Neher, University of British Columbia), Research project, “Business Fluctuations in the United States and Canada”

S. F. KALISKI

Research

Shift Parameters of the Price-Unemployment Tradeoff

Publications and Papers

“Structural Unemployment in Canada: The Occupational Dimension”, *Canadian Journal of Economics*, Vol. II, No. 2, (May, 1969)

Honours and Activities

Member, Publications Committee,

Social Science Research Council
of Canada
Member, Board of Editors,
Canadian Journal of Economics

N. H. LITHWICK

Research

Urban Economics
Economic Development in the
Caribbean
Science Policy

Publications and Papers

"The City in Canada: Problems and
Policies", in L. Officer and
L. Smith, eds., *Economic Problems
and Policies in Canada*, Prentice-
Hall forthcoming, 1969

*Science, Government and Society:
Towards a Rational Science Policy
in Canada*, Methuen, June, 1969

Honours and Activities

Member, Agricultural Advisory
Committee, National Capital
Commission

C. D. Howe Memorial Fellowship

K. MARWAH

Research

Econometric World Model
Study on Liquidity Demand
Econometric Explorations in Growth

Publications and Papers

*An Econometric Model of Price
Behavior in India*, book under
publication by Asia Publishing
House. Final press copy with
the publishers

"Inventory Investment and
Distributed Lags Responses",
presented at the Winter Meetings
of the Econometric Society,
San Francisco, 1966, later,
Carleton Economic Papers 68.05

"An Econometric Model of
Colombia: A Prototype
Devaluation View", *Econometrica*,
April, 1969

"Measuring the Role of Liquid
Assets in Consumption: A Cross
Country View of the World
Economic Periphery", Carleton
Economic Papers 69.03

"An Econometric Model of India:
Estimating Prices", Carleton
Economic Papers 69.04

Honours and Activities

Consultant, MATHEMATICA,
Princeton

S. J. D. MAY

Research

The investigation, using Monte Carlo
methods, of small-sample
properties of least-squares
estimators of the structure of
autoregressive schemes

The investigation, using Monte Carlo
methods, of small-sample
properties of single-equation
methods for estimating the
structure of equations which
together comprise a multi-equation
system

C. H. McMILLAN

Research

Foreign trade planning in the U.S.S.R.

Publications and Papers

"Some Evidence on the Nature and
Extent of Soviet Participation
in Foreign Trade", paper presented
in a general seminar of the
Department of Political Economy,
The Johns Hopkins University,
Baltimore, Maryland,
April 30, 1969

G. PAQUET

Research

Urban Economics
(with N. H. Lithwick)

Comparative Economic Systems
(with R. L. Carson)

Social Security
Canadian Economic Development
Economic Aspects of Science Policy
Historical economics
(with J. P. Wallot)

Publications and Papers

"Le méta-problème urbain"

Contre-rapport présenté au colloque
canado-français sur le
Développement Urbain et l'Analyse
Economique — Québec, le

9 septembre 1968 — et publié
dans les actes du colloque, Cujas,
Paris 1969

*Urban Studies: a Canadian
Perspective*

Methuen, Toronto 1968
(with N. H. Lithwick)

"The Economic Council as Phoenix"
in T. Lloyd and J. McLeod (eds)
AGENDA 1970

University of Toronto Press 1968,
pp. 135-158

"Planification économique et
fédéralisme"

Livres et auteurs canadiens 1968,
pp. 188-190

"Health Care Economics"

Paper presented at the XIV
Quadriennial Congress of the ICN
Montreal, 27 June, 1969

"Canada 1760-1850: anamorphoses
et prospective"

Cahiers du Ste-Marie, (numéro
spécial sur l'histoire économique),
juin 1969
(avec J.-P. Wallot)

Honours and Activities

Grant from the Canada Council for
research in historical economics

Directeur de la Société canadienne
de Science économique

Secretary-Treasurer of the Canadian
Economics Association

Director of Research (Human
Science) of the Special Senate
Committee on Science Policy

Consultant to the Unemployment
Insurance Commission

G. RICH

Research

Canadian balance of payments and
capital movements

Honours and Activities

Awarded Ph.D. (Economics),
Brown University, June 2, 1969

T. K. RYMES

Research

The Canadian Economics Accounts
The theory of induced technical
progress

Publications and Papers

"Some comments on regional
economic accounts" in
T. N. Brewis, *Regional Economic
Policies in Canada* (Toronto:
Macmillan & Co., 1968),
pp. 260-282

"Professor Hicks and concepts of
capital and the production
function", a paper given before
the Queen's University Department
of Economics Seminar.
February 13, 1969

Honours and Activities

Elected a member of the International
Association for Research in
Income and Wealth

Geography

D. M. ANDERSON

Research

Recreational Geography Studies in
Canada

Summer Cottages and Cottagers on
the Rideau Waterway, completion
of study for the Ontario
Department of Economics and
Development

Publications and Papers

*A Preliminary Survey of Outdoor
Recreational Potential and a
Tourism Possibility Plan for the
County of Renfrew*, a report by the
Department of Geography for
the County of Renfrew

"Recreation Resource Planning,
Renfrew County of Ontario,"
a paper to the Michigan Academy
of Science, Arts & Letters, U. of
Michigan, Ann Arbor, Michigan,
March 29, 1969

Farm Machinery Densities — North
American 1951-1966, series of
maps for the Royal Commission
on Farm Machinery
(with D. R. F. Taylor)

Honours and Activities

Member, Forestry & Land Use
Advisory Board, Rideau Valley
Conservation Authority, 1968-69

Grant from National Advisory
Council on Geographic Research
for Study of Ottawa-Hull day-trip
recreational zone

Panelist in series of regional conferences on Development and Marketing of Travel & Recreational Resources in Eastern Ontario

Member of Executive of the Community Planning Association of Canada, National Capital Region Branch

D. P. FITZGERALD

Research

Pioneer Settlement in Northern Saskatchewan in the Early 20th Century

Settlement Frontiers in Northern Canada and South East Asia

A human geography of the Northlands

Publications and Papers

"Some thoughts on the Progress and Development of Canadian Geography", an address to the Nihon Chiri Gakkai (Association of Japanese Geographers), University of Tokyo, May 1968, and to the Faculty of Science, Benares Hindu University, Varanasi (India), July 1968

"Settlement in the Canadian North", paper read to a special Conference of the Institute of Geography, Tokyo Kyoiku University, May 1968

"Recent Research Trends in Canadian Geography", paper read to a joint meeting of the Institutes of Geography of the University of Kyoto and the Ritsumeikan University, May 1968. Published in the "Proceedings of the Kyoto University", October 1968

"The Changing Human Geography of Canada", an address to a Convocation of the Gadjadara University, Jakarta (Indonesia), June 1968, and an Extraordinary Meeting of the University of Kabul (Afghanistan), July 1968. Published in the Gadjadara "University Papers", Vol. XX, 1968

"The Opening of New Lands in Canada and in Thailand", a paper read to the Faculty of Arts and Science, Chulalongkorn University, Bangkok (Thailand), June 1968

"The Relationships between Geography and Allied Disciplines in Canada", a paper presented to a seminar of the Circle of Scholars, Simla, July 1968

"The Pioneer and the Forest", Pack Memorial Lecture, Yale University, February 1969. Published by the Yale University Press, 33 pp. 1969

Honours and Activities

Elected Honorary Fellow of the Institut geografii Sibiri i Dal'nego Vostoka AN SSSR (Institute of Geography of Siberia and the Far East), Irkutsk, U.S.S.R.

Editor (Provisional), "Frontiers", a new international and interdisciplinary scholarly journal devoted to a study of man's past and present activities along the cold, dry, tropical wet and high altitudinal borders of the oecumene, or habitable world

Organizing Secretary, The International Circle of Geographers Social Science Research Council Travel Awards

J. P. JOHNSON, JR.

Research

Analysis of Rock Glacier Movement in Southwestern Yukon

Honours and Activities

Appointed to Icefield Ranges Research Project Advisory Committee, Arctic Institute of North America

D. R. F. TAYLOR

Research

Problems and potential of the developing nations of Africa with particular reference to East Africa

The development of new central places in East Africa

The application of computer mapping techniques to Canadian and East African topics

The pre-history of the Kenya Highlands with special reference to the pre-Bantu people of the Kikuyu Plateau

An examination of Canada's hidden map resources

Publications and Papers

"The Use of African Place Names", paper read to the African Studies Association, 11th Annual Meeting, Los Angeles, October 1968

"Perspectives in Rural Geography" *Rural Africana* No. 6, Fall, 1968, pp. 10-17

"New Central Places in East Africa" *African Urban Notes* Vol. 3, No. 4, December 1968, pp. 15-33

"Agricultural Change in Kikuyuland" in *Environment and Land Use — Geographic Studies From Africa*, (ed.) Thomas and Whittington, Chapter 17, Methuen, London, 1969, pp. 180-220

"The Hidden Map Resources of Eastern Ontario" report to the Department of Energy, Mines and Resources, April 1969

Honours and Activities

Chairman, Carleton Committee of CUSO

Member of executive committee of the Canadian Association of Map Libraries

Chairman of a Committee to examine Canada's hidden map resources

Vice-President of the Ottawa Center of the Canadian Meteorological Society

Secretary, Ottawa Geographical Society

Executive member of the Canadian Committee on African Studies

Consultant, External Aid Orientation Program for East Africa, Carleton University, June 1968

Canada Council Grant to study new central places of the Coast Province Kenya, March 1969

Awarded research grant, Department of University Affairs to study computer mapping of Ontario

P. E. UREN

Research

The geography of rural Hungary

Honours and Activities

Managing Editor, *Canadian Slavonic Papers*, Canadian Association of Slavists

President, Ottawa Geographical Society

T. P. WILKINSON

Research

Transport of rock debris in upland streams: a study of rates of movement of bed, suspended and dissolved loads on a basin-to-basin and storm-to-storm basis. An attempt to quantify the development of (underfit) fluvial patterns in Pleistocene deposits

Palaeohydrology of the Ottawa Lowland — two related studies into (a) the morphology and implications of underfit streams in superficial materials of the Ottawa Lowland and (b) sedimentation characteristics of possible deltaic sands on 'islands' in the 'sand plains' around Ottawa. Definition of their history and environment of deposition

Transport of rock debris in low-order upland streams

Publications and Papers

"Low Order Upland Stream Loads", Papers delivered at the Universities of Lancaster, Durham and Newcastle, May and June, 1969

Honours and Activities

Brief submitted on High School Geography to the Ontario Teachers Federation, January 1969

Brief submitted to the Canadian Association of Geographers for the Science Council on Geomorphology, May 1969

Brief submitted to the Commission on Teaching and Learning, Faculty of Arts, Carleton University

Political Science, Public Administration and Public Law

R. D. ABBOTT (Public Law)

Research

The law of water pollution in Ontario and elsewhere

Honours and Activities

LL.M., Law School of Harvard University

C. AKE (Political Science)

Research

A General Theory of the Political Process. Received grant from Canada Council to complete the writing of the book in Europe, summer 1969

Publications and Papers

"Political Obligation and Political Dissent," *Canadian Journal of Political Science*

"Social Contract Theory and the Problem of Politicization; The Case of Hobbes," *Western Political Quarterly*

Honours and Activities

Elected member of the conference for the study of Political Thought. (An International Study Group)

J. ALEXANDER (Political Science)

Research

Writing book on *Government and Politics in a Technological Society*

Publications and Papers

"The Demise of the Dialogue, or, the Governing Technique", paper presented for the Caucus for a New Political Science to the national convention of the American Political Science Association, September, 1968

"The Bureaucratic Malaise," paper delivered to the 10th Senior Officers' Conference, Public Service Staff Development Centre, Ontario Civil Service, October, 1968

"The Uses of Radical Philosophy," and "The Future of New Left Radicalism in America," papers presented to the Fellows of the Institute for Policy Studies, Washington, D.C., December, 1968

"The Soft Cell," in Donald M. Hancock and Gideon Sjoberg, eds., *Responses to the New Individualism in the Post-Welfare State* (New York: Columbia University Press, 1969)

Honours and Activities

Founding Member of the Caucus for a New Political Science (U.S.A.)

Visiting Scholar, Center for the Study of Democratic Institutions, Santa Barbara, California, summer, 1968

Member, "Panel of Experts," of the Liberal Party of Canada as of May, 1969

Trustee, American Institute for Political Communication, Washington, D.C., 1969

Political Science Consultant, Wadsworth Publishing Company, 1969

A. BROMKE (Political Science)

Research

Political Changes in the Communist Orbit

Soviet and East European Studies in the West

Social Profile: Department of External Affairs

Publications and Papers

(Ed.) Japanese translation, *The Communist States at the Crossroads*, Tokyo, Jiji Press, 1967, Vol. 1, 251 pp. Vol. II — 228 pp., index

"Poland and Czechoslovakia: The Hesitant Alliance", *The Central European Federalist*, Vol. XV, No. 1, June, 1967, pp. 2-20

"Ideology and National Interest in Soviet Foreign Policy", *International Journal*, Vol. XXII, No. 4, Autumn, 1967, pp. 547-562

"Polish Communism: The Historians Look Again", *East Europe*, Vol. 16, No. 12, December 1967, pp. 20-27

Lectures on Eastern Europe and East-West Relations at the Israeli Institute of International Affairs, the University of Teheran, the National Iranian University, the University of Karachi, Delhi University, Indian Society of International Law, the Indian School of International Studies, China Study Centre in Delhi, Association of Oha Kyokai in Tokyo and the International House of Japan. February and March 1968

Lectures on "The Political Crisis in Poland" at the London School

of Economics, Royal Institute of International Affairs and St. Anthony's College.
May 7-10, 1968

Attended the Sixth Annual Banff Conference on World Affairs and participated in a panel discussion on the political situation in Czechoslovakia, August 19-23, 1968

Lecture on "The Impact of the Soviet Invasion of Czechoslovakia in the World" at the Department of Political Science, University of Victoria; Department of Political Science, University of Calgary; Soviet and East European Studies Program, University of Alberta; the Canadian Institute of International Affairs Branches in Victoria, Vancouver, Castlegar, Calgary and Edmonton, December 2-6, 1968

"Czechoslovakia and the World: 1968", *Canadian Slavonic Papers*, Vol. X, No. 4, 1968, pp. 581-591

Lecture on "Current Soviet Foreign Policy" at the Canadian Forces Staff College in Toronto, January 6, 1969

Attended the C.I.I.A. Conference on Eastern Europe at the University of Saskatoon, January 25, 1969 and lectured on "Political Changes in Czechoslovakia"

Lecture on "The Political Situation in Poland After the 5th Party Congress" at the Sino-Soviet Institute, The George Washington University, Washington, D.C., February 25, 1969

Lecture on "The Communist States in Eastern Europe" at the National Defence College in Kingston, March 28, 1969

"Poland's Political Crisis", *The World Today*, Vol. 25, No. 3, March, 1969, pp. 117-126

Attended the Mid-West Conference of the American Association for the Advancement of Slavic Studies held at the University of Nebraska, Lincoln, and participated in a panel on "The Political Changes in Eastern Europe", April 10-12, 1969

Attended an Annual Conference of the British National Association for Soviet and East European

Studies held at Westfield College, University of London and delivered a paper on "The Party and Politics in Poland", April 18-20, 1969

Honours and Activities

Attended the Seventh Conference on World Politics in Berlin, September 6-8, 1967

Attended the Sixth Conference of the International Political Science Association in Brussels, September 20-22, 1967

Elected President, Canadian Association of Slavists, 1968-69

G. DOERN (Political Science)

Research

Ph.D. Dissertation, *Scientists and the Making of Science Policies in Canada*

Publications and Papers

"The Role of Royal Commissions in the General Policy Process and in Intergovernmental Relations", *Canadian Public Administration*, Vol. X, No. 4, December, 1967, 417-433

"Canadian Manpower Policy: A Case Study in Intergovernmental Relations", *Canadian Public Administration*, Vol. XII, March, 1969

"Scientists and Science Policy Machinery", W. D. K. Kernaghan (ed.), *Bureaucracy in Canadian Government*, Methuen Publications (forthcoming)

D. FRASER (Public Law)

Research

Collective bargaining for the professional employee

Publications and Papers

"The Bilateral Education — a Proposal for Educating Professional Engineers", paper presented to a seminar of fourth-year engineering students at Carleton University in November, 1968

Honours and Activities

Appointed Don of Vanier College of York University

Appointed to arbitration panel of
Le Syndicat des Services
Hospitaliers du district d'Ottawa

T. R. HARMSTONE (Political Science)

Research

Preliminary research for a study of
local decision-making in the
Soviet Union; preliminary research
for a chapter on comparative
developments in the political
systems of Eastern Europe

Final draft of an article on Soviet
leadership

Publications and Papers

*Russia and Nationalism in Central
Asia, The Case of Tadzhikistan.*
The Johns Hopkins Press, 1969

Honours and Activities

Discussant, Colloquium on the
U.S.S.R., October 25, 1968,
McMaster University

Discussant, Panel on Soviet Urban
Political Leadership, CPSA
meeting, June 4, 1969

L. G. KJOSA (Political Science)

Research

"A Social Profile of Canadian
External Affairs Personnel: A
Longitudinal Analysis" (with
Professors A. Bromke and F. Kirk)

"Recruitment and Motivation within
Political Party Organization:
A Study of the Middlemen of
Politics"

Publications and Papers

"Structure and Dimensions of
Election Broadcasting in Canada"
(with K. Z. Paltiel), paper
delivered to the 1969 Annual
Meeting of the Canadian Political
Science Association, York
University, Toronto, June 4, 1969

R. O. MACFARLANE (Public
Administration)

Research

Staff Training in the Public Service

Honours and Activities

Member, Editorial Committee,

Canadian Geographical Journal
Adviser to and participant in Ontario
Senior Officers Conference,
May 11-16, 1969

Member, Board of Governors,
Algonquin College of Applied
Arts and Technology

Participated in training programs
for Administrative Officers,
Public Service Commission

R. A. MACKAY (Political Science)

Research

Compiling and annotating a collection
of speeches and documents on
Canadian foreign policy

Publications and Papers

*Documents on Canadian External
Relations*, Vol. 2, *The Paris Peace
Conference*, 1919, June, 1969,
Queen's Printer

K. D. MCRAE (Political Science)

Research

Plurilingual societies

Publications and Papers

"Multilingualism in Switzerland
and Canada", public lecture,
State University of New York
at Buffalo, March 28, 1969

*The Federal Capital: Government
Institutions* (Studies of the Royal
Commission on Bilingualism and
Biculturalism, 1), Ottawa,
The Queen's Printer, 1969.
xviii, 270 pp., 16 maps

"Structure historique du Canada",
in Louis Hartz *et al*, *Les Enfants
de l'Europe: essais historiques sur
les Etats-Unis, l'Amérique latine,
l'Afrique du sud, le Canada et
l'Australie* (translated from the
English by Gérard Durand).
Collections Esprit "Frontière
ouverte", Editions du Seuil,
Paris, 1968, pp. 222-277.

W. A. MULLINS (Political Science)

Research

Dissertation in final stages:
*The Concept of Ideology:
An Analysis and Evaluation*

J. R. NELLIS (Political Science)

Publications and Papers

Completed Ph.D. dissertation at
Syracuse University:

*An Economic Theory of
Developmental Ideology: The
Tanzanian Example*

Honours and Activities

Attended a meeting on "Problems
of Socialism in Tanzania" at the
University of Toronto,
January, 1969

K. Z. PALTIEL (Political Science)

Research

Public subsidization of election
expenses

Comparative political party finance

Controls on political broadcasting
in modern democracies

Party politics in Israel

Publications and Papers

The structure and dimensions of
election broadcasting in Canada
(with Larry G. Kjos) paper
delivered to the 41st Annual
Meeting of The Canadian Political
Science Association,
York University, Toronto
on June 4, 1969

"Contrasts Among the Several
Canadian Political Finance
Cultures" to appear in volume
on Comparative Political Finance
edited by Arnold J. Heidenheimer
to be published in D. C. Heath
Comparative Political Behaviour
Series; General Editor Professor
Lester Milbrath

Honours and Activities

Member of the Executive Council
of the Canadian Political Science
Association

Canada Council Research Grant 1968
for a study on the control of
Small Party in the Israeli
Political System

Canada Council Research Grant 1969
for a study on the control of
political broadcasting in
democratic countries

Canada Council Leave Fellowship
1969-70

G. ROSEME (Political Science)

Research

"Soviet Politics and the Soviet
Literati" a paper in preparation
for publication in the *Canadian
Slavonic Papers*

"The Soviet Union and the EEC"

Honours and Activities

"The Marxist-Leninist Solution to
the Canadian Nationalities
Problem" a commentary at the
Canadian Association of Slavists
convention at Calgary, June, 1968

I. G. STEVENSON (Political Science)

Research

Constitutional Development in
the United Nations (Ph.D.
dissertation for Princeton
University)

H. VON RIEKHOFF (Political Science)

Research

Research on the documents of the
German General Staff and the
Polish Foreign Ministry, 1918-1933

Writing book on German-Polish
Relations, 1919-1933

Publications and Papers

"The Defence Review and Its Effects
on Canada's Role in NATO,"
Canadian Business (June 1969)

"Toward the Reconciliation of
Europe: New Approaches for the
U.S., the UN, and NATO,"
Paper read to the United Nations
Association Conference, held at
Colgate University, March 1969

Psychology

D. K. BERNHARDT

Honours and Activities

Member of the Board of Directors,
Ottawa Youth Services
Bureau

Contributor to Child Development
Abstracts and Bibliography and
to The Wonderland of Knowledge

Contributor to the following radio
and television programs: Trans
Canada Matinee, As the Times
Are, and Something Else

P. A. FRIED

Research

"Reversible" lesions and one-trial learning

An examination of variables interacting with the limbic system in approach-avoidance situations

Publications and Papers

Effect of pre- and post-operative treatment in septal lesioned rats, Canadian Psychological Association, 4 June, 1969

R. D. HOGE

Research

Studies of the factors affecting information search and decision making

Studies of coalition formation behavior in the triad (with L. Strickland)

Honours and Activities

Consulting Editor — *Canadian Journal of Psychology*

A. B. LAVER

Research

Title: *Precursors of Psychology in Ancient Egypt*. A study of Egyptian understanding of the nature of man, with particular reference to his psychological processes, based on Egyptian texts and archaeological records from the archaic period to the New Kingdom

Honours and Activities

Departmental representative on the Science Faculty Board

Member, Academic Committee of Science

M. MARSHALL

Research

Equivalence and distinctiveness pretraining in adult humans

Some effects of multiple AB_n learning with nonverbal stimuli

Emil Kuntze's biography of G. T. Fechner, a translation with Hildegard Corbet

Publications and Papers

Common label pretraining:

Interference and/or facilitation? *Psychonomic Science*, 1968, 13(6), 313-314

Gustav Fechner, Dr. Mises, and the Comparative Anatomy of Angels. *Journal of the History of the Behavioral Sciences*, 1969, V(1), 39-58

The Comparative Anatomy of Angels: A sketch by Dr. Mises: 1825. Translation from the German with Hildegard Corbet. *Ibid.*, 1969, V(2), 135-151

P. D. MCCORMACK

Research

Monitoring eye movements during the learning of verbal paired-associate lists

Publications and Papers

"Monitoring eye movements during the learning of low-high and high-low meaningfulness paired-associate lists". *Journal of Experimental Psychology*, Vol. 79, No. 1, 1969, pp. 18-21 (with T. E. Moore)

"Monitoring eye movements during the learning of noun-pairs involving four combinations of stimulus and response concreteness-abstractness". *Psychonomic Science*, Vol. 11, No. 4, 1968, pp. 133-134 (with W. E. Fingas, K. M. Haycock and T. E. Moore)

"Monitoring eye movements while studying the effects of response familiarization on paired-associate learning." *Psychonomic Science*, Vol. 12, No. 6, 1968, pp. 269-270 (with T. E. Moore)

"Monitoring eye movements under conditions of associative matching, response production and stimulus and response production". *Canadian Journal of Psychology*, Vol. 23, No. 2, 1969 (with G. D. Clemence and T. E. Moore)

"Two stages of paired-associate learning and eye movements", paper presented at Northern

Illinois University, DeKalb,
Illinois, February 1969

"Three recent studies on eye
movement monitoring during the
learning of verbal paired-
associates", paper presented at
Indiana State University,
Terre Haute, Indiana, March 1969

Honours and Activities

Consulting Editor, *Canadian Journal
of Psychology*, 1968

A. J. RAY

Research

Learning in amphibians

Electrophysiological correlates
in one trial and all-or-none
learning

Positive reinforcement from
avoidance trial onset in the rat

Publications and Papers

Instrumental avoidance learning by
the tiger salamander, *Ambystoma
tigrinum*. *Animal Behaviour*,
1969, 17, 202-209

Pressurized air shuttle-avoidance
in the cat: acquisition and
extinction as a function of US
intensity and intertrial interval.
Journal of Genetic Psychology,
1969, 115, 178-190

T. J. RYAN

Research

Children's behavior in groups
Sociometric studies with preschool
children

Children's reaction to frustration

Publications and Papers

"Discrete-trial instrumental
performance related to reward
schedule and developmental level."
*Journal of Experimental
Psychology*, 1968, 78, 31-37
(with C. Orton & J. B. Pimm)

"The multi sensory motor method
of teaching reading. *Journal of
Experimental Education*, 1968,
36, 57-59 (with Linn, J.A.)

"Effects of observer, instructional set,
and reward schedule upon
instrumental performance."
Proceedings 76th Annual

Convention, American
Psychological Association, 1968,
363-364

"Instrumental conditioning in
children," in Reese, H., and
Lipsitt, L. *Experimental Child
Psychology*, Academic Press:
New York, 1969

"Instrumental conditioning in
performer and observer: Effects
of observer condition,
instructional set, reward schedule,
and sex of S." *Developmental
Psychology*, 1969, No. 5 (with
J. E. Strawbridge)

"Patterning in partial reward
schedules with children."
Presented at the Society for
Research in Child Development,
Santa Monica, California,
March 1969

The magnitude of the frustration
effect in children as a function of
reward expectancy. Presented
at the Canadian Psychological
Association, Toronto, Ontario,
June, 1969 (with J. E. Strawbridge)

Honours and Activities

Chairman, Advisory Committee on
Early Childhood Education,
Algonquin College

On leave 1969-70 to conduct a
research project on the
consequences of poverty conditions
during early childhood for the
Vanier Institute of the Family
and the Economic Council of
Canada

H. M. SIMPSON

Research

Effects of overt responses on pupillary
activity

Physiological and behavioral
correlates of imagery

Publications and Papers

"Magnitude and latency of the
pupillary response during an
imagery task as a function of
stimulus abstractness and imagery
ability." *Psychonomic Science*,
1968, 5, pp. 55-56 (with A. Paivio)

"Latency and magnitude of the
pupillary response during an
imagery task." *Psychonomic*

(with F. M. Molloy, S. M. Hale,
& M. H. Climan)

Honours and Activities

Faculty exchange member to the
University of Leningrad, U.S.S.R.,
May, 1969

L. H. STRICKLAND

Research

Coalition formation in three-person
groups (with R. D. Hoge)

Publications and Papers

"Changes in self-presentation in
need-for-approval scores,"
Perceptual and Motor Skills,
1968, 27, pp. 335-337

"Coalition formation in continuous,
episodic, and terminal situations."
Psychological Reports, 1968,
23, pp. 915-921 (with B. Lacombe)

"Freedom of choice and legitimacy
of incentive magnitude as
determinants of attitude change."
Paper presented at Meetings of
Eastern Psychological Association;
Philadelphia, Pa., April, 1969
(with J. C. Holmes)

Honours and Activities

Assessment Committee, The Canada
Council; Division on doctoral
fellowships in psychology

Chairman; Graduate Studies
Committee, Department of
Psychology

W. E. WALTHER

Research

Effects of Smoking Education in
Secondary Schools
(with F. R. Wake)

Television as an aid in University
education

Emotional factors in hospitalized
coronary patients

R. A. WENDT

Research

Latent Extinction

Honours and Activities

Chairman — Human Resources
Research Advisory Committee
(DRB)

Member — Advisory Group on
Human Factors (N.A.T.O. Science
Committee)

D. W. ZIMMERMAN

Research

Learning in the absence of primary
reinforcement
Models of distributions of test scores

Publications and Papers

Concurrent schedules of primary
and conditioned reinforcement
in rats. *Journal of the Experimental
Analysis of Behavior*, 1969, 12,
261-268

Coefficient alpha, test reliability,
and heterogeneity of score
distributions.
Journal of Experimental Education,
1968, 37, 90-95
(with G. J. Burkheimer)

Estimation of the reliability of
composite tests by a computer
simulation method. *Psychological
Reports*, 1969, 24, 115-122

An item sampling model for the
reliability of composite tests.
*Educational and Psychological
Measurement*, 1969, 29, 49-59

Test reliability and parameters of
observed score distributions.
To appear in *Journal of
Experimental Education*,
June, 1969

Sociology and Anthropology

H. BURSHTYN

Research

Carleton Student Study
Migration and Mental Illness
Causes of Variation in Occupational
Prestige Ratings

Publications and Papers

"A Factor-Analytic Study of
Occupational Prestige Ratings,"
*The Canadian Review of Sociology
and Anthropology*, Vol. 5, no. 3,
August 1968, pp. 156-80

Honours and Activities

Representative, Inter-university
Consortium for Political Research,

Research Consultant, Bereavement Research Project, University of Ottawa, Department of Psychiatry and the Royal Ottawa Hospital

D. P. FORCESE

Research

Differences in French-Canadian and English-Canadian cognitive styles. (With S. Richer)

Publications and Papers

"Calvinism, Capitalism, and Confusion: The Weberian Thesis Revisited", *Sociological Analysis* 29: (Winter, 1968) 193-201

"Report on Videotaped Instruction in Social Research Methods" (With K. Mozersky) submitted to Commission on Undergraduate Teaching and Learning, Faculty of Arts, Carleton University

M. FRUMHARTZ

Research

Carleton Student Study

Honours and Activities

Member, Board of Governors, Special Committee of the Board and Research Advisory Committee, The Ontario Institute for Studies in Education

Chairman, Senate Commission on Undergraduate Teaching and Learning, Faculty of Arts, Carleton University

C. S. GORDON

Research

A study of the relation of the nature of strikes to the place of the strikers in the social structure

A study developing content analysis techniques for use in the analysis of literary works

Publications and Papers

"Urbanization, Religion, and Lethal Aggression", (with John R. Hofley, Carleton University, and Hugh P. Whitt, Vanderbilt) University, submitted for publication

"Human Relations in Business",

Proceedings, Ottawa branch of the Ontario Association of Administrative Assistants and Private Secretaries, Institute for Secretarial Development

S. S. GUTERMAN

Research

A Study of Negro Personality Characteristics

Publications and Papers

"In Defense of Wirth's 'Urbanism as a Way of Life'". *American Journal of Sociology*, Vol. 74, No. 5, March, 1969, pp. 492-99

J. HARP

Research

Preparation of an edited book of readings on poverty in Canada, including several original articles. The book is co-edited with John Hofley and is to be published by Prentice-Hall of Canada Ltd. on or about January, 1970

Completion of a research monograph titled: Comparative Community Structure: An Analysis of Social Change in Small Communities. The project was begun at Cornell University and is funded by the Taber Foundation

Continuing analyses of the professionalization of Sociology in Canada, employing data obtained from the C.S.S.A. project plus other sources

Publications and Papers

"Renewal Plans: A General Systems Analysis of Rural Townships," *Rural Sociology*, Vol. 33, No. 4, December 1968, pp: 460-473 (with Richard J. Gagan)

"Changes in Rural Social Organizations: Comparative Data from Three Studies", *Rural Sociology*, Vol. 34, No. 1, March, 1968 (with Richard J. Gagan)

"French and English Sociologists in Canada: A Comparative Note on Professionalization." A paper read at the annual meeting of the Canadian Society

of Sociology and Anthropology,
York University, June 7, 1969
(with James Curtis)

Honours and Activities

Appointed Fellow of the American
Sociological Association, 1969

Appointed member of the review
board of the journal *Rural
Sociology*, 1968

Visiting professor of sociology,
Cornell University, May-August,
1969

J. R. HOFLEY

Research

Demographic analysis of religion in
Canada, 1870-1960

Study of ways unemployed men can
be assisted and means by which
current and future programs
geared to these men can be
evaluated and improved

Publications and Papers

"Social Action and Research:
Employability, A Case Study."
*Social Research Institute
Proceedings*, 1968, pp. 1-19

"Resource Mobilization for
Employment — Special Project,"
Interim Report, National Health
and Welfare, February, 1969

*Lower Class Religion: The Moral
Basis of a Backward Society*,
doctoral dissertation, University
of North Carolina at Chapel Hill,
1968

Canadian Poverty. Prentice-Hall of
Canada, Toronto: approximately
300 pages, forthcoming
(with John Harp)

Book Reviews:

- (1) Decision Making in Poverty
Programs: Case Studies from
Use-Work Agencies,
Candian Welfare, 44
(Nov.-Dec, 1968), pp. 25-26
- (2) The Family in the Soviet
Union by K. Geiger,
Slavonic Papers, 1969

Honours and Activities

Consultant, City Social Service
Department, Edmonton

Member Advisory Council on Family
Studies, Algonquin College

C. S. JONES

Research

The Characteristics of Vowel
Systems (with particular reference
to Afrikaans, Swahili and
English), for doctoral dissertation,
Indiana University

Verb-Object Agreement in
Compound Sentences in
Hungarian

Publications and Papers

"Some rules involving vowels in
Swahili", Indiana University
Linguistics Conference, 21 August,
1968

B. A. MCFARLANE

Research

Education, Training, Recruitment,
Utilization and Careers of
Sub-Professionals in Engineering,
Medicine and Dentistry in
Great Britain, France and
Canada

The University and Occupational
Choice: The Carleton Student
Study

A Study of the Utilization, Mobility
Patterns and Continued and
in-Career Education and Training
of a sample of Highly Qualified
Manpower in Canada

Publications and Papers

"The Socialization of Boys and Girls
at School and Work: A Canadian
Study" in *Adolescence: Psycho-
social Perspectives*, Bernard Caplan
and Serge Lebovici, (eds.), Basic
Books, 1969, pp. 174-86

"Recruitment to Dentistry", an
excerpt from *Dental Manpower
in Canada* reprinted in *Canadian
Society* (3rd edn.) Blishen, Jones,
Naegle, and Porter (eds.),
Macmillan, 1968, pp. 299-312

"The Girls' and the Boys' World",
(Co-author with Oswald Hall),
reprinted in *Canadian Society*
(3rd edn.) Blishen, Jones, Naegle,
and Porter, (eds.), Macmillan,
1968, pp. 215-218

Trabajadores y Empleadores:

*A Critique on Research Projects
Concerned with the Study of Social
Participation in Development in*

Latin America. A paper prepared for and read to the Research Section of the Social Institutions Development Department, I.L.O., Geneva, Spring 1968, pp. 15

Research Strategy in Manpower Planning. The Working Paper for Lord Willis Jackson of Burnley's Steering Committee for the Second Policy Conference on Highly Qualified Manpower to be held at the OECD, Paris, in 1970. Mimeo. pp. 7. October 1968

The Role of Sub-Professionals in Developed and Developing Countries. A paper read to a Seminar of Economic Research Officers of the I.L.O., and the International Institute of Labour Studies, Geneva, Spring 1968, Mimeo. pp. 18

The Impact of Technology on Education. A paper read to the "Cours de Stagiares" at the International Institute for Labour Studies, May 1968, Mimeo. pp. 20

The Changing Role of the Engineer in Canadian Society. A Paper read to a Joint Meeting of the Ottawa Chapters of the Engineering Institute of Canada and the Association of Professional Engineers of Ontario, November 1968. Mimeo. pp. 16

Motivation, Management and Employee-Professionals. A Paper presented to the Ottawa Chapter of the Certified General Accountants of Canada, April 1969

Honours and Activities

Member, National Advisory Committee to the Ministry on Dental and Oral Health.

Member, Ad Hoc Committee on Dental Auxiliaries (Chairman, Chief Justice Wells).

Consultant to the Committee for Scientific and Technical Personnel, Organization for Economic Co-operation and Development, Paris.

K. A. MOZERSKY

Research

Doctoral dissertation for Cornell

University. "Study of the responses of rural Western Canadian communities to railroad branch-line abandonment"

Publications and Papers

"Report on Videotaped Instruction in Social Research Methods", (with D. Forcese), submitted to Commission on Undergraduate Teaching and Learning, Faculty of Arts, Carleton University

S. RICHER

Research

Study of Protest Orientation at Carleton University

Study of French-English Differences in Cognitive Style

Publications and Papers

"The Economics of Child Rearing', *Journal of Marriage and the Family*. Vol. XXX, No. 3, 1968. pp. 462-66

"School Organization and Student Differences". *Canadian Education and Research Digest*, March, 1968 (with Raymond Breton)

"Culture, Cognition and English-French Competition", read at the Canadian Sociology Association Meetings, Toronto, June, 1969 (with Pierre Laporte)

The Stages of Social Research: Readings, Prentice-Hall, Englewood Cliffs, 1970, approx. 500 pages (forthcoming) (with Forcese, Dennis)

Honours and Activities

Consultant on Early Childhood Education Study: The Economic Council of Canada and the Vanier Institute

V. F. VALENTINE

Research

A study, with three graduate sociology students, of the use of space in three Ottawa low cost housing units

Publications and Papers

"The Metis of Northern

Saskatchewan," University of Saskatchewan
Napao, University of Saskatchewan, 1969

"Some Problems of the Metis of Northern Saskatchewan," reprinted in W. E. Mann (ed.) *Canada Sociological Profile*, Toronto, Copp-Clark, 1969

"Eskimo of the Canadian Arctic," (with F. G. Vallee)
Carleton Library, No. 41
McClelland and Stewart Limited, Canada, Toronto, 1968, pp. 241.
reprinted in U.S.A. by Van Ostrand

Honours and Activities

Social Science representative to the Research Committee of the Arctic Institute of North America

Vice-President, Canadian Research Centre for Anthropology

Member, Board of Editors for *Anthropologica*

Member, Board of Directors of the Canadian Centre for Community Studies

F. G. VALLEE

Research

The social power and viability of French Canadian communities outside the Province of Quebec

Publications and Papers

"Stresses of Change and Mental Health Among the Canadian Eskimos", *Arch Environ Health*, Vol. 17, Oct. 1968. pp. 565-571

"The Changing Lives of the People of the Northlands," paper presented in Public Lecture Series on *The Changing Northlands*, Carleton University, November 13, 1968. To be published in *Proceedings of Series*

"Regionalism and Ethnicity: the French Canadian Case." Paper read at Annual Meeting of the Western Anthropological and Sociological Association, Banff, Alta., 29th December, 1968. To appear in *Proceedings of Conference on Social and Cultural Perspectives on Regionalism*.

18 pages

"Demand and Supply for Sociology in Ontario Universities," in R. A. Helling, (ed.) *Report on Departments of Sociology — and Anthropology in Ontario*, University of Windsor, January, 1969. pp. 1-27

"Brief to the Senate Committee on Science Policy," working paper prepared for Canadian Association of Sociologists and Anthropologists, presented to its Executive Committee, January, 1969.
22 pages

"Education in an Ethnically Plural Society," address to conference of teachers. Department of Indian Affairs and Northern Development, Montreal, 21 February, 1969

"Psychiatric Problems of Canadian Ethnic Minorities," paper read at Annual Meeting of Canadian Psychiatric Association, Toronto, June 11th, 1969

Honours and Activities

Canada Council grant for study of French Canadian communities outside Province of Quebec

Editorial Director, *Anthropologica*

Appointed Member Academic Panel, Canada Council

Consultant, research grants, Department of National Health and Welfare, Ottawa

ST. PATRICK'S COLLEGE DIVISION

O. CONDEMINÉ

Research

Research for a critical edition of the Works of Octave Crémazie, to be presented as a doctoral dissertation

Honours and Activities

Canada Council grant for research on Octave Crémazie, Summer 1969

J. GREATREX

Research

Currently engaged in preparing a

doctoral thesis on "Henry Beaufort, Bishop of Winchester (1404-47), and the Priory of St. Swithun's"

Honours and Activities

Canada Council grant for research in England for the summer of 1968
British Council grant for study visit in England, spring 1969

L. JACKSON

Honours and Activities

Canada Council Doctoral Fellowship for 1969-70

R. JEFFREYS

Research

Alliteration in Early Roman Poetry, doctoral dissertation for University of London

Honours and Activities

Canada Council Doctoral Fellowship for 1969-70

J. K. JOHNSON

Publications and Papers

"Does the local Historical Society belong in the Archives Field?" American Association for State and Local History, Annual Meeting Toronto, August 30, 1967

"The Publication of Documents". Pan American Institute of History and Geography, Archival Seminar, Ottawa, November 15, 1968

"Sir James Gowan, Sir John A. MacDonald and the Rebellion of 1837". *Ontario History*, Volume LX, No. 2, June, 1968

Editor of *The Canadian Directory of Parliament, 1867-1967*. Ottawa, Queen's Printer, 1968

Editor of *The Papers of the Prime Ministers*; Volume 1, *The Letters of Sir John A. MacDonald, 1836-1857*. Ottawa: Queen's Printer, 1968

Editor of *Affectionately Yours: The Letters of Sir John A. MacDonald and his Family*. Toronto: Macmillan of Canada, 1969

F. KIRK

Research

"Political Subculture & Differential Status: the Political Behavior of Socio-Religious Groups in the United States." (Dissertation)

"A Social Profile of External Affairs Department Personnel: A Longitudinal Analysis" (with A. Bromke and L. G. Kjos)

A. LOZANO

Research

Working on doctoral thesis on "Los Gozos y las Sombras." Trilogia Novelesca de G. Torrente Ballester

Publications and Papers

Paper presented to the Canadian Society of Hispanists on June 14, 1969

Title: Comicidad en los entremeses de Cervantes

Honours and Activities

Canada Council Grant 1969

H. MACDOUGALL

Publications and Papers

"Newman — Historian or Apologist?" presented to the Canadian Historical Association, Calgary, 1968, *Historical Papers, 1968*, pp. 152-163.

K. O'DONNELL

Research

The prose works of Thomas D'Arcy McGee

The writings of Jean de Brébeuf

Publications and Papers

"The Wanderer in Barometer Rising," *University of Windsor Review* Spring, 1968, pp. 12-18

J. T. O'MANIQUE

Publications and Papers

"The Production of a Self-Conscious Android." A paper presented at the Faculty of Science of the

University of Ottawa, March 13,
1969

S. B. PARK

Research

Normalization Rule in Two-Stage
Least-Squares Estimation
Bayesian approach to the Estimation
of Structural Equations

Publications and Papers

"Two-Stage Least-Squares
Estimation with Constraints on
the Coefficients," read at the
Econometric Society Winter
Meetings held in Evanston,
Illinois, U.S.A., December 1968

C. SCHUETZ

Publications and Papers

Papers: "Some Implications of the
Current Soviet Military Posture
Relating to the Defence of North
America", submitted to the
House of Commons Standing
Committee on External Affairs and
National Defence, 1st Session,
28th Parliament

J. E. TRAINOR

Research

Evidence from Greek literature for
capital investment in the economy
of ancient Greece

Publications and Papers

"The *Phormio*: Terence as Good
Critic, Poor Innovator," a paper
read at the annual meeting of the
Classical Association of Canada,
June 7, 1969, at York University,
Toronto

F. R. WAKE

Publications and Papers

"Changing Sex Role: Implications
for Education", in the *McGill
Journal of Education*, Fall, 1968,
Volume III, Number 2
"Modifications of Personality" in
the Newspaper 'Scinteia',
Bucharest, Romania, Spring, 1969
*Attitudes of Parents Towards the
Pre-Marital Sex Behaviour of
Their Children and Themselves*,

Waverly Press, Incorporated,
Baltimore, Maryland

"Family Living and Sex Role", and
"Aspects of Family Living" —
talks given to the Family Life
Institute at Fort William, Ontario,
July 8 and 9, 1968, and at the
University of Ottawa,
July 30 & 31, 1968

"Sex Differences in Pupillary
Response to Visual Stimuli" —
to the Society of
Psychophysiological Research,
8th Annual Meeting, Washington,
D.C., Oct. 18, 1968

"Report: Research on Smoking",
presented to the Standing
Committee on Health, House of
Commons, Ottawa, February 20,
1969

"Administration vs. Academics —
The Eternal Confrontation" —
talk presented to the Ontario
Association of School Business
Officials, Annual Meeting, Ottawa,
April 28th, 1969

Honours and Activities

Reappointed, Ontario Board of
Examiners in Psychology

Programme Discusant, Canadian
Cancer Society, at the Annual
Meeting in Ottawa,
November 1968, and at the
Ontario Division Meeting in
Toronto, January 1969

J. WOLFE

Research

Research on dreaming and some
issues in Berkeley's philosophy

Publications and Papers

*Plato's Cyclical Argument For
Immortality*, Proceedings of the
Inter-American Congress of
Philosophy, Summer, 1967

"Pretending to Be Awake," *Noûs*,
December, 1967

"The Criteria of Sleep," *Theoria*,
March, 1968

"Ayer on Non-Starters," *Philosophy
and Phenomenological Research*,
March, 1968

Review of Alan White's, *Philosophy
of Mind*, Dialogue, March, 1968

- Review of S. Cahn's, *Fate, Logic and Time*, Dialogue, June, 1968
- "The Identity Thesis As A Scientific Hypothesis," Dialogue, December, 1968
- Review of L. Pincoff's, *The Rationale of Legal Punishment*, Philosophy and Phenomenological Research, December, 1968

SCHOOL OF SOCIAL WORK

S. BOWERS

Publications and Papers

- Review of R. Lubove, "The Struggle for Social Security," *Canadian Welfare* 45, 1969, pp. 24-25
- "Accreditation and University Autonomy", paper given at Annual Meeting of Council on Social Work Education, Cleveland, Ohio, January 23, 1969
- "The Troubled Child", paper given before Ontario Association for Children with Learning Disabilities, Sarnia, May 21, 1969
- "Social Work Today," paper given before National Association of Social Workers, Albany, N.Y. June 11, 1969

Honours and Activities

- Member, Commission on Accreditation, Council on Social Work Education
- Member, Advisory Council to the Minister of Social & Family Services (Government of Ontario)
- Member of the Executive Board and Treasurer, International Association of Schools of Social Work
- Member, Professional Advisory Committee, Canadian Mental Health Association (Ontario Division)
- Educational Consultant to Virginia Commonwealth University (School of Social Work), May, 1969

J. M. GRIPTON

Research

- Study of Factors associated with

Breakdown of Adoption Placements

E. E. MOORE

Publications and Papers

- "The Social Work Assistant", *Social Casework*, 49, 1968, 552-555

Honours and Activities

- Institute Leader, "Social Work Diagnosis", Children's Aid Society, Ottawa, January, 1969

A. E. SELVAN

Publications and Papers

- "Learning Theories" in *Current Patterns in Field Instruction in Graduate Social Work Education* (ed. B. L. Jones), New York, 1969

N. M. VANIER

Research

- Institutional Involvement and Social Class

Honours and Activities

- Chairman, Research Advisory Committee, Department of National Health and Welfare

FACULTY OF SCIENCE

Biology

C. A. BARLOW

Research

- Analysis of the distribution and phenology of insects in Gatineau Park
- Investigation of the effects of environmental factors on the dynamics of insect populations
- Effects of temperature and temperature acclimation on locomotion, orientation, and survival of the grain weevil at extreme temperatures

Publications and Papers

- "Key factors in the population dynamics of the European corn borer, *Ostrivia nubilalis* (Hbn.)," paper presented at the XIIIth International Congress of

Entomology, Moscow,
August 1968

- "Locomotor responses to temperature in the grain weevil, *Sitophilus gravenhorstii* (L.) (Coleoptera: Curculionidae)," Canadian Journal of Zoology, 47, No. 2, pp. 217-224, 1969, (with W. D. Kerr)

T. W. BETZ

Research

The hormonal control of the functional differentiation of the duodenum of chick embryos

The dose response curve of the effects of porcine growth hormone on the accumulation of protein in chick embryos. The specificity of the response and the comparative potencies of other vertebrate somatotrophins in this system

The hormonal control of the functional differentiation of the retina of the eye of chick embryos, *in vivo*. In collaboration with Dr. A. A. Moscona, Department of Biology, University of Chicago, Chicago, Illinois

Publications and Papers

"The effect of embryonic pars distalis grafts and albumen on the growth of chick embryos." J. Embryol. Exptl. Morphol. 20: 777-783, 1968

"The Pars Distalis and Avian Development." In: Conference on Hormones in Development, E. J. W. Barrington and M. Hamburger, Eds., The National Foundation Press, New York. (In press)

Honours and Activities

Chairman of the "Developmental Biology" session of the 23rd Technical Session on Biological Research at the University of Western Ontario, Feb. 28 - March 1, 1969

Papers presented by my group:

1. "The ability of transplanted pars distalis cells to secrete trophic hormones," (with M. Brasch)

2. "The effects of hormones of the pars distalis on the functional differentiation of the duodenum of the chick embryo," (with F. T. Bellware)
3. "The effects of embryonic pars distalis grafts and albumen on growth of chick embryos"

Attended 27th Annual Symposium of the Society for Developmental Biology, Ithaca College, Ithaca, New York, June 19-21, 1968

Attended 3rd International Congress of Endocrinology, Mexico City, Mexico. June 30 - July 5, 1968

Attended conference on "Hormones in Development", Nottingham University Nottingham, England. Sept. 9 - 12, 1968. Presented paper "The role of the hormones of the anterior pituitary gland in avian development," was editor of the 'Discussion' of the session "Multiple Hormone Interactions on Growth and Differentiation" and co-chairman with Dr. Stanley Cohen of the session on "Analysis of the mechanism of action of nerve growth promoting factor (NGF) and epidermal growth promoting factor (EGPF) on the maturation and differentiation of target structures"

Elected Fellow of the International Institute of Embryology, March, 1969

Nominated for membership in The Endocrine Society

Nominated for membership in the Society for Developmental Biology

D. R. GARDNER

Research

Research into neurotransmitter substances of vertebrate brain

Effect of DDT upon responses of fish nervous system

Effect of temperature upon central nervous system of fish

Investigation of ion requirements of invertebrate nerve cells

Publications and Papers

"The role of calcium ions in the action potentials of *Helix aspersa* neurones." *Comp. Biochem.*

Physiol., 20, pp. 147-162,
(with G. A. Kerkut), 1967

"A comparison of the effects of sodium and lithium ions on action potentials from *Helix aspersa* neurons." *Comp. Biochem. Physiol.*, 25, pp. 33-48, 1968
(with G. A. Kerkut)

Honours and Activities

Elected to membership of the
New York Academy of Sciences

H. F. HOWDEN

Research

Taxonomy, ecology and zoogeography
of the Scarabaeidae of the world

Zoogeography and evolution:
comprehensive analysis of the
distributional patterns and the
historical and environmental
factors that have influenced them

Investigation of the scarabs
associated with animal nests with
special emphasis on the
coevolution of the taxa

Publications and Papers

"Generic Relationships of *Thyce*,
Plectrodes, *Dinacoma* and
Hypotrichia, with a description of
a new genus and species from
eastern Texas (Coleoptera:
Scarabaeidae: Melolonthini)",
Canadian Entomologist 100,
pp. 542-548

"A suggested revision of
nomenclatural procedure in
animal taxonomy", *Systematic
Zoology*, 17, pp. 188-191
(with H. E. Evans and
E. O. Wilson)

"Canadian *Ochodaeus*, with a
description of a new species
(Coleoptera: Scarabaeidae)",
Canadian Entomologist, 100,
pp. 1118-1120

"Effects of man on the Ontario
insect fauna", symposium "The
zoogeography of the Insects of
the Great Lakes Region",
sponsored by the Entomological
Society of Ontario at Sault Ste.
Marie, 2-4 October, 1968

"A review of the Trichiinae of North
and Central America (Coleoptera:

Scarabaeidae)", Memoir No. 54
of the Entomological Society
of Canada 77 pp.

"Effects of the Pleistocene on North
American insects", in *Annual
Review of Entomology*, 14, 1969,
pp. 39-56

Honours and Activities

President, Society for the Study of
Coleoptera, at its inception, at the
annual meeting of the
Entomological Society of
America, Dallas, Texas,
1-6 December, 1968

Councillor, Society of Systematic
Zoology, 1969-1971

W. I. ILLMAN

Honours and Activities

Secretary, General Section, Canadian
Botanical Association

V. N. IYER

Research

Mechanisms of genetic recombination
and replication: Studies at the
molecular and genetic level.
*Experimental systems: DNA
mediated genetic transformation
of B. Subtilis; episomes of enteric
bacteria*

Publications and Papers

"Transmissible antibiotic resistance
associated with a Klebsilla strain."
Bacteriol. Proc. GP 34, 48,
1969 (with R. V. Iyer)

"Loss of an episomal fertility factor
following multiplication of
coliphage M13." *Molecular and
General Genet.* (in press), 1969
(with S. R. Palchaudhury)

K. W. JOY

Honours and Activities

Secretary, Canadian Society of Plant
Physiologists

J. D. H. LAMBERT

Research

Analysis of conifer-hardwood and
boreal vegetation in the Ottawa
River — Gatineau Watershed to
determine major environmental

factors pertinent to vegetational change
Phytosociological studies of the
Northern Conifer — Hardwood
Forests of Eastern Ontario

Publications and Papers

"The ecology of terricolous lichens of the Northern Conifer-Hardwood forests of central Eastern Canada."
Canadian Journal of Botany. 46, pp. 1043-1078, 1968
(with P. F. Maycock)

Honours and Activities

Member of the Canadian IBP-CT
Northwest Territories and Yukon
Tundra Subcommittee

P. E. LEE

Research

Characterization of insect-transmitted viruses and insect viruses.
Studies of virus-host cell relationships; viral DNA and RNA syntheses in infected cells

Publications and Papers

Virus-cell studies of *Tipula* iridescent virus in hemocytes of *Galleria mellonella*, 1969
(with B. Younghusband)

Electron microscopy of infection and synthesis of *Tipula* iridescent virus.
Virology (in press)

M. E. McCULLY

Research

The synthesis and secretion of polysaccharide by the algae *Fucus* and *Chondrus* with emphasis on the role of these polysaccharides in morphogenesis and in the adhesion of young embryos to the substrate

The histology of regeneration in *Fucus*

The development of lateral roots in higher plants with special reference to the secretion of polysaccharides and various enzymes by the cells of the emerging lateral roots

Publications and Papers

"Histological studies on the genus *Fucus* II." Histology of the reproductive tissues. *Protoplasma*

66, pp. 205-230, 1968

"Laboratory culture of the intertidal brown algae *Fucus vesiculosus*."
Can. J. Bot. 47, pp. 219-223, 1969
(with R. G. Fulcher)

"Histology of regeneration in *Fucus*."
Proc. 7th Int. Seaweed Symposium, Spain, 1968 (with R. G. Fulcher)

"Preparation of thin sections of mites for high resolution light microscopy," *Can. J. Zoology*, 1969
(with J. S. Kuo)

"Histological studies on the genus *Fucus* IV." Histology and histochemistry of regeneration.
Can. J. Bot., Sept. 1969,
(with R. G. Fulcher)

H. G. MERRIAM

Research

Studies of ecosystem function including: Effects of habitat choice on populations of terrestrial molluscs, and Food niche relationships and population metabolism of litter-dwelling insectivores

G. SETTERFIELD

Research

Biochemical composition and ultrastructure of developing tuber cell walls
(With Dr. E. Schneider)

Structure of nuclei of chicken erythrocytes in relation to composition and function
(With Mr. K. Brasch)

Ultrastructure of guard cells in relation to function
(With Dr. W. Allaway)

Actions of plant hormones in relation to nucleic acid and protein synthesis and cell growth

Publications and Papers

"Cytological responses of Jerusalem artichoke tuber slices during aging and subsequent auxin treatment." (with L. Fowke), pp. 581-602, *Biochemistry and Physiology of Plant Growth Substances*, (ed.) F. Wightman and G. Setterfield, Runge Press, Ottawa, 1968

Edited, *Biochemistry and Physiology of Plant Growth Substances*.

The Runge Press, Ltd., Ottawa,
1968, 1640 pp. (with F. Wightman)

"Fine structure of chicken erythrocyte nuclei during sequential removal of histone proteins." Presented at the Meetings of the Canadian Federation of Biological Societies, Queen's University, June, 1968 (with K. Brasch)

Honours and Activities

Sabbatical Leave — Dept of Biology,
Laval University, Quebec

Associate Editor, Canadian Journal
of Botany (Cont'd)

Member of Editorial Advisory Board,
Science Forum

D. A. SMITH

Research

Taxonomy, distribution, ecology
and physiology of deer mice
(*Peromyscus*)

Migration and longevity of bats

Ectoparasites of small mammals

Taxonomy, distribution and breeding
biology of small mammals in
Uganda

Publications and Papers

"On the use of tapered tail wires
for study of skins of small
mammals" *Journal of Mammalogy*,
vol. 49, no. 4, 1968, pp. 787-790

J. A. WEBB

Research

Carbohydrate Metabolism in plants
Photosynthesis and translocation of
sugars

Honours and Activities

Member of New York Academy of
Sciences

F. WIGHTMAN

Research

Enzymatic and radiochemical studies
on the metabolism of tryptophan
and other indole compounds
in cell-free systems from higher
plants, with special reference to
the biosynthesis of the growth
hormone, 3-indoleacetic acid

Intracellular location, isolation
and characterization of
transaminase enzymes in young
seedling plants

Publications and Papers

Editor of: *Biochemistry and
Physiology of Plant Growth
Substances*. 1640 pp.

The Runge Press Ltd., Ottawa,
1968 (with G. Setterfield)

"Intermediary steps in the enzymatic
conversion of tryptophan to IAA
in cell-free systems from Mung
bean seedlings" in: *Biochemistry
and Physiology of Plant Growth
Substances*. (ed.) F. Wightman
and G. Setterfield. The Runge
Press Ltd., Ottawa. pp. 273-288,
1968 (with D. Cohen)

Honours and Activities

Presented lectures at the Botanical
Institutes of the Universities of
Prague, Munich and Rostock
during July, 1968, on my
research work on the
"Biosynthesis of Auxin in Higher
Plants"

Eastern Director of the Canadian
Society of Plant Physiologists,
1968-69

H. YAMAZAKI

Research

The mechanisms controlling
bacterial and viral nucleic acid
synthesis

Publications and Papers

"The mechanism of early inhibition
by an RNA phase of protein and
RNA synthesis in infected cells."
Virology, 37, pp. 429-436, 1969

"Virus-induced synchronous division
of bacterial cells." *Virology*, 37,
pp. 678-679, 1969 (with K. Potter)

Chemistry

C. H. AMBERG

Research

Interaction of gases with
desulfurization catalysts, using
infrared spectroscopic and mass
spectrometric techniques

Investigation of hydroxyl groups in calcium hydroxyapatite by infrared spectroscopy

Studies in heterogeneous catalysis using chromatographic microreactors

Publications and Papers

"Contamination problems encountered with high-vacuum greases in vacuum systems". Paper read at Amherst Adsorption Conference, Amherst, Mass., 12 October, 1968

"Recent Methods in Catalytic Research". Lecture delivered at Case Western University, Cleveland, Ohio, 14 February, 1969, as part of a special series on "Surface Phenomena and Catalysis" given in the Chemical Engineering Science Division

"What goes on at the Surface?" Junior High School lecture, delivered at Glebe Collegiate Institute, Ottawa, 11 March, 1969

Honours and Activities

Canadian Delegate, International Congress on Catalysis

Vice-President, Canadian Committee on Catalysis

Lecturer and consultant on catalyst problems, DuPont of Canada Ltd., Maitland Works

External Examiner in Physical Chemistry, University of Guyana

Past President, Family Service Centre of Ottawa

R. G. BARRADAS

Research

Thermodynamics of the Electrical Double Layer

Kinetics of Proton Discharge Mechanisms and Electro-catalytic Effects of Additives

Electrochemical Adsorption of Organic Compounds

Organic Electrochemical Reactions
Studies of Alkaline Battery Electrode Systems

Publications and Papers

"A Simplified Introduction to Operational Amplifiers in Polarographic and Other

Voltammetric Studies". Parts I and II *Denki Kagaku*, Nos. 5 and 6 issues of the *Journal of Electrochemical Society of Japan*, 36, pp. 340-344, 418-423 (1968), (with D. F. Taylor)

"Automatic Recording of Differential Capacity Curves for Hanging Drop Electrodes". *J. Chemical Instrumentation*, 1 (2), pp. 153-167 1968, (with E. M. L. Valeriete)

"Comments on the Theoretical Calculations of Polarographic Solution — Resistance". *Journal of Electroanalytical and Interfacial Electrochemistry*, (in press for 1969), (with D. F. Taylor)

"Temperature Dependent Electrocapillary Studies in Lithium Chloride Solutions", at American Chemical Society Special Symposium on Interfacial Phenomena at Electrodes, Atlantic City, 156th National Meeting, September 8-13, 1968

"Some Problems of the Electrical Double Layer". An invited seminar at the Department of Chemistry, University of Sherbrooke, 3 March, 1969

"Adsorption at the Polarized Mercury/Tetrahydrofurfuryl Alcohol Interphase", at the Annual Meeting of the Association Canadienne-Française pour l'avancement des Sciences at the University of Ottawa, 9 November, 1968

"Anodic Behaviour of Silver Electrodes in Alkaline Solutions", at Chemical Institute of Canada Symposium of Electrode Processes, 27 May, 1969, Montreal

"Kinetics of Charge Transfer of Halogen Species at Platinum Electrodes in Non Aqueous Solvents", at Chemical Institute of Canada Symposium on Electrode Processes, 27 May, 1969, Montreal

Honours and Activities

External Examiner at a Ph.D. Chemistry Examination at University of Toronto, School of Graduate Studies, 19 December, 1968

Member of Judges' Panel at the Ottawa Regional Science Fair Exhibition held at the University of Ottawa, 20 March, 1969

Reappointment to the Chemical Institute of Canada's Chemical Education Award Selection Committee for 1968-69

Reappointment to the Chemical Institute of Canada's Editorial Board of the "Canadian Chemical Education" publication for 1968-69

Appointed to Fellowship Selection Committee of the Electrochemical Society, New York for 1968-69

Served as Reviewer and Appraiser of Scientific Articles and Textbook for several learned Journals

C. L. CHAKRABARTI

Research

Stability and thermodynamic properties of various substituted carbamic acids

Metal chelates in solution

Solvent extraction chemistry

Mechanism of metal atom formation in atomic absorption spectroscopy

Publications and Papers

"Effect of metal-oxygen bond on the sensitivity of atomic-absorption spectroscopic technique". *Canadian Journal of Chemistry*, Vol. 47, pp. 587-596, 1969, (with V. S. Sastri and D. E. Willis)

"Some observations on potassium dichromate as an oxidimetric standard". *The Analyst*, Vol. 94, pp. 20-25, 1969, (with R. Belcher and W. I. Stephen)

"Studies on the solvent extraction of metal dithiocarbamates". *Canadian Journal of Chemistry*, Vol. 47, pp. 2320-2323, 1969, (with V. S. Sastri and K. I. Aspila)

"Some aspects of 'chemical' interferences in atomic-absorption spectroscopy". *Talanta*, Vol. 16, July, 1969, (with V. S. Sastri and D. E. Willis)

"Studies on the stability of dithiocarbamic acids", *Talanta*, Vol. 16, July, 1969, (with K. I. Aspila and V. S. Sastri)

"Some chemical aspects of atomic-absorption spectroscopy", presented at 15th Spectroscopy Symposium of Canada, Toronto, 21-23 October, 1968 (with V. S. Sastri and D. E. Willis)

"Polarographic studies on the decomposition pathways of dithiocarbamic acids", presented at 52nd Canadian Chemical Conference and Exhibition, Montreal, 25-28 May, 1969 (with S. J. A. Joris)

"Studies on 'chemical' interferences in atomic-absorption spectroscopy", presented at 52nd Canadian Chemical Conference and Exhibition, Montreal, 25-28 May, 1969 (with V. S. Sastri and D. E. Willis)

"The teaching of analytical chemistry", presented as an invited position paper at the Seminar on the Teaching of Analytical Chemistry, organized by the Analytical Chemistry Division of The Chemical Institute of Canada, Montreal, 29-30 May, 1969

Honours and Activities

Chairman, Spectroscopy Society of Canada, Ottawa Valley section

Executive member of The Chemical Institute of Canada, Ottawa section

Sessional Chairman, 15th Spectroscopy Symposium of Canada, Toronto, October 21-23, 1968

Delivered an invited position paper at the Seminar on the Teaching of Analytical Chemistry, organized by the Analytical Chemistry Division of The Chemical Institute of Canada, Montreal, May 29-30, 1969

Faculty Advisor to Carleton University Chapter of The Chemical Institute of Canada

General Chairman, 17th Spectroscopy Symposium of Canada

J. A. KONINGSTEIN

Research

Phonon modes of Garnet crystals Zaman (Zeeman-Raman) experiments of trivalent rare earth ions.

Publications and Papers

- "On the Observation of an Antisymmetric Scattering Tensor". *Nature*, 217, p. 445, 1968, (with O. S. Mortensen)
- "Electronic Raman Spectra, Part II. Raman to Rayleigh Ratios for Trivalent Rare Earth Ions". *Phys. Rev.*, 168, p. 75, 1968, (with O. S. Mortensen)
- "Depolarization Ratio of Overtone and Combination Bands of the Vibrational Raman Effect". *Chem. Phys. Letters*, 2, p. 31, 1968
- "Observation of Electronic Raman Transitions of the Terbium Ion". *Chem. Phys. Letters*, 2, p. 469, 1968
- "Laser Excited Phonon Spectra of Garnets". *J. Mol. Spectrosc.*, 27, p. 343, 1968 (with O. S. Mortensen)
- "Electronic Raman Spectra IV. Relation between the Scattering Tensor and the Symmetry of the Crystal Field". *J. Opt. Soc. Am.*, 58, p. 1208, 1968 (with O. S. Mortensen)
- "Laser Induced Phonon Spectrum of an Oriented Crystal of Thulium Gallium Garnet". *J. Opt. Soc. Am.*, 58, p. 1402, 1968 (with T-N Ng)
- "New Developments in Raman Spectroscopy with Lasers: Electronic Transitions". *Appl. Spectroscopy*, 22, p. 438, 1968
- "Selection Rules for an Electronic Raman Effect in a Situation where the Appropriate Point Group is a Double Group". *Phys. Rev.*, 174, p. 477, 1968
- "On the Inner and Outer Scattering Tensor for Vibrational Raman Effect". *Chem. Phys. Letters*, 2, p. 469, 1968
- "Theory of Raman Scattering Overtone and Combination Bands in the Vibrational Raman Effect". *J. Mol. Spectr.*, 28, p. 309, 1968
- "Laser Induced Phonon Spectrum of an Oriented Crystal of TmGaG". *J. Opt. Soc.*, 58, p. 1462, 1968 (with T-N Ng)
- "Electronic Raman Effect of Dysprosium Ion". *Solid State Communications*, 7, p. 351, 1969
- "Tensorial Properties of an Electronic

Raman Effect of the Thulium Ion". *Can. J. Chem.*, Vol. 47, p. 1395 1969

- "On the Theory of the Raman Effect". Invited Paper, NATO Advanced Study Institute, T.U., Delft, Netherlands, 4-25 August, 1969
- "Observation and Interpretation of Electronic Raman Effects in Garnets". Conference on Night Scattering of Solids, New York University, 3-7 September, 1968, (with O. S. Mortensen)
- "Tensorial Properties of Raman Scattering". Invited Paper, Mid-American Spectroscopy Meeting, Chicago, 12-17 May, 1969
- Seminars on Electronic Raman Spectroscopy
- Clarkson College of Technology, New York, October 1968
- University of Alberta (Edmonton) January 20, 1969
- University of Saskatchewan (Saskatoon), January 21, 1969
- University of Saskatchewan (Regina), January 22, 1969
- University of Calgary, January 23, 1969
- University of British Columbia, January 24, 1969
- University of California, Los Angeles, January 29, 1969

Honours and Activities

- Member of a panel at the NATO Advanced Study Institute, Delft, Netherlands, 4-25 August, 1969
- Invited speaker at the Mid-American Spectroscopy Meeting, Chicago, 12-17 May, 1969

P. KRUIS

Research

- Ultrasonic absorption in aqueous phosphate systems
- Structure and kinetics of solutions of alkali halides in dimethylsulphoxide
- Cavitation-induced chemical reactions in liquids
- Critical solution phenomena
- Publications and Papers
- "Calculation of Emission —

Concentration and Absorption — Concentration Relationships for Spectral Lines". *Can. J. Chem.*, 46, pp. 3151-3156, 1968 (with A. Demayo and L. W. Hunter)

Honours and Activities

Liaison officer between the University and the Rotary Club re "Adventures in Citizenship"

C. H. LANGFORD

Research

Studies of complex formation and solvent exchange reactions of metal ions in dimethylsulfoxide

Studies of solvation by nuclear magnetic resonance and related methods

Studies of solvation, encounter probabilities, and their relation to reactivity (especially photochemical)

Publications and Papers

"The Development of Chemical Principles". *Addison-Wesley*, Reading, Mass., 400 pp., 1969 (with R. A. Beebe)

"Ligand Substitution Dynamics". *Ann. Rev. Phys. Chem.*, 19, pp. 193-214, 1968 (with T. R. Stengle)

"Complex Formation and Solvent Exchange Reactions of Fe(III) in Dimethyl-sulfoxide". *J. Am. Chem. Soc.*, 90, pp. 4485-6 1968 (with F. M. Chung)

"Preferential Solvation of Co^{2+} and Ni^{2+} : NMR methods". *Can. J. Chem.*, 46, pp. 3183-87, 1968 (with L. S. Frankel and T. R. Stengle)

"Preferential Solvation and the Mechanism of Solvolysis of $\text{Cr}(\text{NCS})_6^{3-}$. . .". *J. Am. Chem. Soc.*, 91, pp. 2236-40, 1969 (with S. Behrendt and L. S. Frankel)

Honours and Activities

Alfred P. Sloan Foundation Research Fellow

"Encounters and Slow Reactions". Paper given in the symposium on chemical dynamics at the 153rd National Meeting of the American

Chemical Society, September 1968
"Preferential Solvation and Photochemical Racemization of $\text{Cr}(\text{ox})_3^{3-}$ ". Paper given with V. S. Sastri at the 154th National Meeting of the American Chemical Society, April 1969

Guest lectures at York University, University of Western Ontario, University of Guelph, and the North Jersey Section of the American Chemical Society

Taught summer course at U.S. — N.S.F. Summer Institute Enrichment Program for Secondary School students, Mt. Hermon School, Mt. Hermon, Massachusetts

P. M. LAUGHTON

Research

Isotope effects

Forced Claisen condensation

Pesticide studies

R. A. SHIGEISHI

Research

The field ionization apparatus for the study of gas-surface interactions is near completion and is expected to be fully operational by July 1969

M. PARRIS

Research

Mechanisms of some inorganic reactions

Publications and Papers

"Isomerization of nitrito- to nitropentakis(methylamine)-cobalt (III) cation." (with L. Majid, *Can. J. Chem.*, 46, p. 2962, 1968

C. S. TSAI

Research

Mechanism of Lysozyme Catalysis
Malic Enzyme and its Model Systems

Publications and Papers

"Substituent Effect on Lysozyme-catalysed Hydrolysis of Some β -Aryl di-N-acetylchitobio-

sides". *Biochemical Journal*.
In Press. (with J. Y. Tang and
S. C. Subbarao)

"Mechanism of Lysozyme-catalyzed
Reaction". Canadian Federation
of Biological Societies, University
of Alberta, 11-13 June, 1969,
(with J. Y. Tang and
S. C. Subbarao)

D. R. WILES

Research

Nuclear recoil chemistry and related
phenomena in ionic and molecular
solids

Construction of a low-energy ion
acceleration and a Mössbauer
spectrometer, and application of
these instruments to solid-state
studies

Publications and Papers

"Theoretical Views of Szilard
Chalmers Reactions in Solid
Systems. II. Parent Reformation
by Billiard-Ball Collisions".
Canadian Journal of Chemistry,
Vol. 46, p. 3201, 1968
(with W. H. Wong)

"Recoil Reactions in Polynuclear
Metal Carbonyls". *Canadian
Journal of Chemistry*, Vol. 47,
p. 1019, 1969
(with S. R. Narayan)

"Nuclear Recoil Reactions in
Organomanganese Compounds.
III. $Mn(CO)_5$ ". *Canadian Journal
of Chemistry*, Vol. 47, p. 1327
1969 (with I. G. de Jong and
S. C. Srinivasan)

"Recoil Reactions in Organometal
Compounds". Puerto Rico Nuclear
Center, Mayagüez, Puerto Rico,
July 1968

"Recoil Reactions in Metal
Carbonyls". Puerto Rico Nuclear
Center, University of Puerto Rico,
San Juan, Puerto Rico, July 1968

"Nuclear Recoil Reactions in
Arenometal Carbonyls — a Hot
Zone Model". 156th National
Meeting, American Chemical
Society, Atlantic City, September
1968, (with S. C. Srinivasan)

"Nuclear Recoil Reactions in
Organomanganese Compounds".
52nd Annual Conference, Chemical

Institute of Canada, May 1969.
(Presented by S. C. Srinivasan)

"Reconstitution of Molecules
Following 'Impulse Pyrolysis' in
Solids". Symposium on Molecular
Motion in Solids, 52nd Annual
Conference, Chemical Institute of
Canada, May 1969

Honours and Activities

Member, Past Officers and Directors
Advisory Committee, Chemical
Institute of Canada

Member, Vice-Presidential Committee
on Destination and Structure,
Chemical Institute of Canada

Member, Editorial Board, Chemistry
in Canada

Member, Editorial Board, Canadian
Chemical Education

Best Paper Award, Extractive
Metallurgy Division, AIME, for
the best publication during 1967
and 1968, (with B. R. Hollebone
and W. A. Morgan). Washington,
D.C., February 1969

R. H. WIGHTMAN

Research

Synthesis of selected natural
products and non-benzenoid
aromatic compounds.
Development of new synthetic
methods

Honours and Activities

Guest worker, National Research
Council, Division of Biochemistry
and Molecular Biology, Summer
1969

Geology

G. Y. CHAO

Research

Monoclinic chlorapatite from
Bob's Lake, Ontario (in
preparation)

The crystal structure of a natural
monoclinic chlorapatite (in
preparation)

Carletonite, a new mineral
(in preparation)

Crystal structure of carletonite

Crystal structure of eudialyte
Soda amphiboles from Mont St.
Hilaire

Refinement of the crystal structure of apophyllite

Publications and Papers

The refinement of the crystal structure of parahopeite. (Accepted for publication). *Zeit. Kristallogr*

Optical and X-ray data for iron-rich orthopyroxenes from Northern Quebec (with J. M. Moore and S. H. Kranck, accepted for publication) *Can. Min.*

The crystal structure of two hexagonal chlorapatites (with A. W. Hounslow). International Meeting, Mineralogical Association of Canada and Mineralogical Society of America. Montreal, June 1969

Honours and Activities

Member, Organizing Committee and Local Committee, 1969 International Crystallographic Computing School

Member, Local Committee, 1970 Annual Meeting, American Crystallographic Association

Co-chairman of session on Mineralogy and Crystallography, International Meeting, Mineralogical Association of Canada and Mineralogical Society of America, Montreal, June 1969

J. A. DONALDSON

Research

Comparative sedimentology of Proterozoic sandstones of Canada

Evaluation of the stromatolite Conophyton for use in biostratigraphic zonation

Distribution, age and significance of Precambrian regoliths

Publications and Papers

"Stratigraphy and Sedimentology of the Hornby Bay Group, District of Mackenzie", Geological Survey of Canada Paper 69-1A, pp. 155-157

"Geology, Trout Lake, Ontario", Geological Survey of Canada Map 1200A

Presented paper at Annual Meeting of the Geological Association of

Canada, Montreal, June 1969
"Dispersal Patterns in Proterozoic Sandstones of the Canadian Shield"

"Geology, North Spirit Lake, Ontario", Geological Survey of Canada Map 1201A

Honours and Activities

Talk to graduate students, Ottawa University Geology Department, January, 1969 — "Studies of Proterozoic Sediments in the Northwest Territories"

Critical reviewer of ten papers, including two final reports for the Solid-Earth Sciences Study, Science Council of Canada

Education Committee, Ottawa Branch, Canadian Institute of Mining and Metallurgy, 1968-69

A. F. GREGORY

Research

Aeromagnetic surveys as an aid in mapping geologic structure

Geology and geophysics of selected mineral deposits in the Grenville Geological Province.

Honours and Activities

Consultant on Earth Resource Satellites, Department of Energy, Mines & Resources (summer 1968)

Critical reviewer of two papers for Special Volume #5 "Age Relations in High-Grade Metamorphic Terrains", Geological Assoc. of Canada

K. HOOPER

Research

Foraminifera of eastern Canada

C. J. KNIGHT

Research

Rb-Sr isotopic composition and whole-rock isocline age of volcanic and intrusive rocks in the Proterozoic of Ontario

Publications and Papers

In preparation: H. W. Fairbairn, P. M. Hurley, K. D. Card and C. J. Knight, (1969), "Correlation of Radiometric Age of Nipissing

Diabase and Huronian Metasediments with Proterozoic Orogenic Events in Ontario"

J. M. MOORE

Research

Field, petrographic and analytical study of mineral assemblages in metamorphic zone sequences, in Grenville of southeastern Ontario and Shuswap Terrane of Southern British Columbia. Silicate analysis

Stratigraphic-structural studies of Grenville metasedimentary and metavolcanic rocks

Honours and Activities

University delegate to the International Geological Congress, Prague, Czechoslovakia

F. K. NORTH

Research

The Cambrian System in Canada
Gravitational tectonics

Honours and Activities

Member, Screening Committee on Earth and Environmental Sciences, Ontario Department of University Affairs, 1967-68-69

G. SKIPPEN

Research

The System
 $\text{CaO}-\text{MgO}-\text{SiO}_2-\text{C}-\text{O}-\text{H}$
at high temperatures and pressures

The Synthesis of micas within the system, siderophyllite—eastonite—phlogopite—annite

The use of the dissociation of methane to control oxidation state in hydrothermal experiments

Publications and Papers

The System,
 $\text{CaO}-\text{MgO}-\text{SiO}_2-\text{C}-\text{O}-\text{H}$
Canadian Conference on Experimental Petrology and Mineralogy, University of Toronto, February 1969

The Metamorphism of Carbonates.
Department of Geology, University of Ottawa, March 1969

An Experimental Model for the Metamorphism of Carbonates,
Geological Association of Canada,
June 1969

Honours and Activities

Member of the National Advisory Committee on Research in the Geological Sciences, Subcommittee on Mineralogy, Geochemistry and Petrology

W. M. TUPPER

Research

Geology and geochemistry of stratiform and carbonate type polymetallic sulfide deposits

Behaviour and dispersion of elements in the primary and secondary geochemical cycle

Publications and Papers

K-Ar Ages on Rocks from the Crater at Brent, Ontario, *Earth and Planetary Science Letters*, Vol. 3, No. 3, November 1968, pp. 148-152. (Co-authored with M. Shafiqullah and T. J. S. Cole)

Trace Element Characteristics of the Sulphide Minerals from the Singhbhum Copper Deposits, Behar, Geological Society of India, Vol. 6, No. 1, 1969, pp. 16-22

Minor and Trace Element Distribution in the Heavy Minerals of the Rivers and Streams of the Bathurst-Jacquet River District, New Brunswick, Geological Survey of Canada, Paper 67-45, pp. 1-9. (Co-authored with R. W. Boyle and M. Shafiqullah)

Copper, Tungsten, Nickel, Cobalt, Manganese and Boron Content of Stream and Spring Sediments, Keno Hill area, Yukon Territory, Geological Survey of Canada Maps, 50, 52, 53, 54, 55 and 56 — 1965. (Co-authored with C. F. Gleeson)

Education of the Exploration Geochemist, *Quarterly of the Colorado School of Mines*, Vol. 64, No. 1, January 1969, pp. 39-41

Activation Energies and Diffusion Characteristics of Argon in

Nepheline (with M. Shafiqullah and T. J. S. Cole), American Geophysical Union Annual Meeting, Washington, April 21, 1969

K-Ar Ages on the Carbonatite Complex, Oka, Quebec, (With M. Shafiqullah and T. J. S. Cole), Geological Association of Canada annual meeting June 4-6, 1969

Geology of the Manganese Deposits of the Chutura District, Georgia, U.S.S.R., Geological Association of Canada annual meeting, June 4-6, 1969

Honours and Activities

Elected President, Ottawa Branch, Canadian Institute of Mining and Metallurgy

R. W. YOLE

Research

Stratigraphy, sedimentology and paleontology of Sicker Group, Vancouver Island

Sedimentary petrology, paleozoic rocks of Southern and Eastern Ontario

Sedimentation and development of St. Clair delta, Ontario

Publications and Papers

Upper Paleozoic stratigraphy of Vancouver Island, British Columbia; *Geol. Assoc. Canada, Proc.* v. 20, pp. 30-40

Honours and Activities

Chairman, Subcommittee for geology brief, Council of University, Departments of Geology (Ontario)

Editor, Newsletter of Geological Association of Canada

Mathematics

P. R. BEESACK

Research

Integral inequalities, differential inequalities

Publications and Papers

"Extensions of Opial's inequality", *Pacific Journal of Math.*, V. 26, 1968, pp. 215-232

(with K. M. Das)

"On certain discrete inequalities involving partial sums", *Can. Jour. of Math.*, V. 21, 1969, pp. 222-234

"Comparison theorems and integral inequalities for Volterra integral equations," *Proc. Am. Math. Soc.*, V. 20, 1969, pp. 61-66

Honours and Activities

Reviewer for *Zentralblatt für Mathematik*

D. K. DALE

Research

Alternate proof of Stirling's Formulae
Probability Sampling: Generalized variance estimation formula

Honours and Activities

Examiner for The MacLaren Research Award 1968-69

J. D. DIXON

Research

Work in group theory: structure theory for linear groups, computational problems for the construction of all permutation representations of a finite group

Publications and Papers

"The solvable length of a solvable linear group." *Math. Z.* 107, 1968, pp. 151-158

Honours and Activities

Reviewer for *Zentralblatt*

Attended American Mathematical Society meeting in New Orleans, January 1969

Attended the meeting of the American Mathematical Society at Northwestern University, Illinois, November 1968

Addressed the Mathematics Colloquium at University of Waterloo, February 1969

V. DLAB

Research

Algebraic representation of general dependence structures

Representation of torsion-free rings by matrix rings over division rings

Characterization of rings in terms of torsions

Publications and Papers

"On a family of simple order groups", *J. Austral. Math. Soc.* 8, 1968

"The structure of torsion-free rings (prelim. communication)," *Comment. Math. Univ. Carolina* 9, 1968, pp. 41-46

"Distinguished submodules," *J. Austral. Math. Soc.* 8, 1968, pp. 661-670

"The concept of a torsion module," *Amer. Math. Monthly* 75, 1968, pp. 973-976

"Distinguished sets of ideals of a ring," *Czechoslovak Math J.* 18/93, 1968, pp. 560-567

"Rank theory of modules," *Fund. Math.* 64, 1968

"Universal algebra representation of regular GA-dependence structures," *Bull. Acad. Polon. Sci. Ser. Sci. Math. Astronom. Phys.* 16, 1968

"A remark on a paper of Elizarov," *Mat. Zametki* 3, 1968

"Semigroups with few endomorphisms," *J. Austral. Math. Soc.* 9, 1969 (with B. H. Neumann),

Honours and Activities

Reviewer for *Zentralblatt* and Mathematical reviews

Attended the Mathematical Research Institute at Oberwolfach, Germany, April 27 to May 3

Awarded a fellowship by the Canadian Mathematical Congress at the Summer Research Institute in Montreal in 1969

Addressed the Ontario Mathematical meeting, March 1969

Addressed the Mathematics Colloquium at McGill University, March 1969

C. W. L. GARNER

Research

Foundations of hyperbolic and Minkowskian Geometry; regular honeycombs in hyperbolic space;

geometrical background for a problem in Design of Experiments

Honours and Activities

Departmental Representative on the Ontario Mathematics Commission

J. E. GRAHAM

Research

"Error and Bias in Area Measurement: A Statistical Approach", To be submitted to the *Canadian Surveyor*

Publications and Papers

"A Numerical Factor for the Taxonomic Separation of *Pterostichus Pensylvanicus* and *Pterostichus Adstrictus*" (with A. Barlow). Accepted for publication in the *Canadian Entomologist*

"Composite Estimators in One and Two Cycle Rotation Sample Designs", *Carleton Mathematical Series*, No. 1, February, 1969

Honours and Activities

Seminar Leader, "Theory and Methods of Scientific Sampling", Ontario Department of Agriculture, Statistics and Food, Toronto, August 1968

K. HARDY

Research

Algebras of functions on a topological space

Publications and Papers

Rings of normal functions; to appear

Honours and Activities

Attended American Mathematical Society meeting in New Orleans, January 1969

Presented a paper to the American Mathematical Society in New York, April 1969

A. B. M. L. KABIR

Research

On developing estimators for the parameters of mixed distributions based on order statistics or sample quantiles

On testing of hypothesis concerning the parameters of mixed distributions

On large sample tests of hypothesis for the parameters of the extreme-value distribution based on optimum quantiles in complete and censored samples

Publications and Papers

"Quantile Estimators of the Parameters of Extreme Value and Weibull Distributions", *Bulletin of the Institute of Statistical Research and Training*, Vol. 2, No. 2, pp. 92-100, 1968

"Optimum Quantiles for the Linear Estimation of the Parameters of the Extreme Value Distribution in Complete and Censored Samples", *Naval Research Logistics Quarterly*, co-authored with L. K. Chan

"Estimation of Parameters of a Finite Mixture of Truncated Distributions", *Naval Research Logistics Quarterly*

"Estimation of the Parameters of a Mixture of Two Poisson Distributions from a Censored Sample", *Technometrics*

Honours and Activities

Awarded a fellowship by the Canadian Mathematical Congress at the Summer Research Institute in Montreal in 1969

M. S. MACPHAIL

Research

Application of functional analysis to summability theory

Publications and Papers

"Consistency and replaceability for co-null matrices," *Math. Z.* 105, 1968, pp. 208-212; (joint authors, S. C. Chang, A. K. Snyder, A. Wilansky)

P. MANDL

Research

Work, in cooperation with N.R.C. on the theory of oscillating aerofoils in hypersonic flow is in progress

Honours and Activities

Attended International Research Seminar on Continuum Mechanics and related Numerical Analysis (A NATO advanced study Institute) The University of Calgary, June 15 — July 27, 1968

Reviewer for journal *Applied Mechanics Reviews*

Carleton's representative to N.R.C.'s Associate Committee on Aerodynamics

L. D. NEL

Research

Relations between properties of a completely regular topological space X and the ring $C(X)$ of real valued continuous functions on X , where $C(X)$ is regarded also as a topological ring under natural topologies
Spectral theory for a class of generalized symmetric operators on infinite products of Hilbert spaces

Publications and Papers

"Theorems of Stone-Weirstrass type for non-compact spaces," *Math. Zeitschr.* 104, 1968, pp. 226-230

Honours and Activities

Reviewer for *Zentralblatt*
Attended American Mathematical Society meeting in New Orleans, January 1969

E. J. NORMINTON

Research

An investigation of the diffusion and convection of heat and circulation due to known potential flow fields

Publications and Papers

"Diffusion and Convection of Heat in the Potential Flow Past a Circular Cylinder"
— to appear: 'Proceedings of the Cambridge Philosophical Society'
"Diffusion and Convection of Heat from Circular Cylinders with Known Boundary Conditions"
— to appear: 'Proceedings of the Cambridge Philosophical Society'

Honours and Activities

Attended the Second Canadian Congress of Applied Mechanics at the University of Waterloo, May 1969

F. H. NORTHOVER

Research

An embedding technique for the solution of linear integral equations

The periodic motion of a dynamical system where energy is supplied from within

An extension of the saddle point method for obtaining asymptotic expansions of contour integrals when the integrand has a pole

Review of the finite cone diffraction problem

Publications and Papers

An advanced treatise "Applied Diffraction Theory" accepted for publication by the Elsevier Publishing Co., Inc

"A simple sufficiency condition for the validity of the W.K.B. method", *Journal of Mathematical Physics*, April - July, 1969

Honours and Activities

Awarded a fellowship by the Canadian Mathematical Congress at the Summer Research Institute in Kingston in 1969

Address to the 8th Ontario Mathematical Meeting in 1968 on "Integral Equations"

J. N. PANDEY

Research

The extension to generalised function space of certain transforms

Publications and Papers

"An extension of Tanno's form of the convolution transformation," with A. H. Zemanian, *Tohoku Mathematical Journal*, 20, 1968, pp. 425-430

"An extension of Haimo's form of Hankel convolutions," *Pacific Journal of Maths.*, Vol. 28, No. 3, 1969

"Complex inversion for the generalized Hankel convolution transformation," *SIAM Journal of App. Maths.*, July 1969

"The generalized Weierstrass Hankel convolution transform," *SIAM Journal of App. Maths.*, to appear

J. C. POLAND

Research

Properties of finite p-groups having a given number of conjugate classes; similarly for other finite groups; in particular, solution of a problem of Brauer and Landau

Finite groups in which every subgroup has core factor group in a given class of finite groups; similarly restricting to maximal subgroups

Publications and Papers

"Group with fixed superstructure", (with J. D. Dixon and A. H. Rhemtulla, submitted to *Math Zeit.*

Honours and Activities

Awarded a fellowship by the Canadian Mathematical Congress at the Summer Research Institute in Winnipeg in 1969

Attended American Mathematical Society meeting in New Orleans, January 1969

B. M. PUTTASWAMIAH

Research

Construction theory of irreducible representations of finite groups

Publications and Papers

"Unitary representations of generalized symmetric group" *Canadian Journal of Mathematics*, Vol. 21, No. 1, (1969)

M. RAHMAN

Research

A study of orthogonal functions in relation to linearized Boltzmann equation

Non-linear aspects of the plasma kinetic theory

Publications and Papers

"Continuum Eigenfunctions for a Hard Sphere Gas", *Can. J. Phys.* 46, p. 2287, 1968

"Discrete Relaxation modes for a Hard Sphere Gas", *Can. J. Phys.* 46, p. 2463, 1968

Honours and Activities

Attended the Annual Conference of the American Physical Society, New York, February 3-6, 1969

A. K. MD. E. SALEH

Research

Estimates of regression parameters based on Rank Tests

Publications and Papers

"Exact first and second order moment of order statistics from truncated exponential distribution" (submitted to American Statistical Association, Nov. 1968)

"Invariance and variance stabilization transformation of Binomial and Poisson data" (submitted to *Technometrics*, 1968)

On a class of non-parametric estimates for regression parameters (Submitted to *Annals of Mathematical Statistics*, July 1968)

Honours and Activities

Awarded a fellowship by the Canadian Mathematical Congress at the Summer Research Institute in Montreal in 1969

H. H. SCHIRMER

Research

A Kakutani type coincidence theorem, to appear

Properties of the fixed point set of contractive multi-functions, in preparation

Publications and Papers

"On fixed point sets of homeomorphisms of the n -ball," to appear in *Israel Journal of Math*

Honours and Activities

Reviewer for *Zentralblatt für Mathematik*

Attended American Mathematical

Society meeting in New Orleans, January 1969

D. W. SIDA

Research

Excitation of meteor atoms through impact with air molecules and deductions about size and velocity distributions. Diffusion cross sections for heavy atoms

Publications and Papers

"The expansion of x^k in terms of Orthogonal Polynomials." *American Mathematical Monthly*, Vol. 75, 1968, pp. 643-5

"Production of ions and electrons", *Monthly Notices, Royal Astronomical Society*, Vol. 143, pp. 37-48, 1969

"The production of ions and electrons by meteoritic processes." Report for Environmental Science Service Administration, Boulder, Colorado, 1968

Honours and Activities

Director, Summer Science Programme, Royal Canadian Institute

Member, Advisory Committee in Mathematics and Computing Science Technology, Algonquin College

Editor, Mathematics Corner, Science Affairs

K. S. WILLIAMS

Research

Study of distribution of solutions of congruences

Publications and Papers

"Quadratic polynomials with the same residues." *Amer. Math. Monthly* 75, 1968, pp. 969-973

"On exceptional polynomials." *Can. Math. Bull.* 11, 1968, pp. 279-282

"Note on pairs of consecutive residues of polynomials" *Can. Math. Bull.* 11, 1968), pp. 79-83

Addendum to "On a theorem of Niven"

Can. Math. Bull. 11, 1968, p. 145

Honours and Activities

Reviewer for Mathematical Reviews
and for *Canadian Mathematical
Bulletin*

G. K. ZELMER

Research

A paper has been submitted for
publication to the Archive for
Analysis and Rational Mechanics.
Some aspects of summability are
at present being investigated

Physics

R. D. BARTON

Research

Measurements of short nuclear
lifetimes by direct electronic
timing methods and the develop-
ment of improved techniques in
this field are in progress

The design of another muonic x-ray
experiment is in progress and
further results have been extracted
from muonic x-ray data of
two years ago and prepared for
publication

D. J. BROWN

Research

Theoretical analysis of various
problems involving deuterons,
such as $p+p \rightarrow d+X^+$ and $pd \rightarrow dp$

Universal Interaction Theory

Infinitely Rising Regge Trajectories
in a Potential Model

Publications and Papers

"The Reaction $p+p \rightarrow d+\pi^+$."
Il Nuovo Cimento, Vol. 55A,
p. 346, 1968
(with M. K. Sundaresan)

"Models for the process $p+p \rightarrow d+\pi^+$
at 3-13 GeV/c." *Nuclear Physics*
B7, p. 37, 1968

Proceedings of the International
Conference on Electromagnetic
Sizes of Nuclei, Ottawa, 1967.
(Edited with M. K. Sundaresan and
R. D. Barton)

Honours and Activities

Attended International Centre for
Theoretical Physics during July, 1968

A. L. CARTER

Research

Precision gamma ray spectroscopy
utilizing an on-line computing
techniques to investigate (p,Y)
and (n,Y) and (n, n', Y)
reactions in various nuclei

R. L. CLARKE

Research

The research program is oriented
towards nuclear structure studies
using fast neutrons. A study of
the collimation of 14 MeV
neutrons is nearing completion.
Design and construction of a
large neutron facility at the
Carleton/University of Ottawa
Dynamitron are proceeding

Measurements of the timing
properties of Ge(Li) gamma
spectrometers are being made as
an adjunct to the neutron studies

The half-lives of several short-lived
nuclear states, observed in the
 (p,Y) reaction, have been
measured. The work has been
carried out at the N.R.C.
accelerator laboratory. The
apparatus (see Dr. R. D. Barton)
will, in future, be used at the
Dynamitron

T. J. S. COLE

Research

Rubidium-Strontium Ages in the
Ottawa area of the Grenville

Applications of Rubidium-Strontium
Dating to Geotectonic
Problems

Sulphur Isotope Mass Spectrometry
Potassium Argon Mass Spectrometry

Publications and Papers

"K-Ar. Ages on Rocks from the
Crater at Brent, Ontario."
M. Shafiqullah, W. M. Tupper,
Department of Geology,
T. J. S. Cole, W. M. Tupper.
*Physics, Earth & Planetary Science
Letters*, Vol. 5, No. 3, pp. 148-152,
November, 1968

"Activation Energies and Diffusion
Characteristics of Argon in
Nepheline." A paper presented at
the Fiftieth Annual Meeting of

the American Geophysical Union,
Washington, D.C., April 21, 1969
(with M. Shafiqullah, and
W. M. Tupper)

"K-Ar. Ages on the Carbonatite
Complex, Oka, Quebec."
A paper presented at the Annual
Meeting of the Geological
Association of Canada,
University of Montreal, Montreal,
Quebec, June 5, 1969
(with M. Shafiqullah and
W. M. Tupper)

K. W. EDWARDS

Research

An experimental investigation of
neutron proton scattering in the
range from 3 to 11 GeV/c,
carried out at the Argonne
Zero-Gradient Synchrotron

Publications and Papers

"Forward Differential Cross-Sections
for the Reaction $p+p \rightarrow d+\pi^+$ in
the Range 3.4 to 12.3 GeV/c."

Physical Review Letters, Vol. 21,
pp. 853-857 (1968) (with
H. L. Anderson, M. Dixit,
H. J. Evans, K. A. Klare,
D. A. Larson, M. V. Sherbrook,
R. L. Martin, D. Kessler,
D. E. Nagle, H. A. Thiessen,
C. K. Hargrove, E. P. Hincks,
and S. Fukui)

E. P. HINCKS

Research

Boson spectroscopy, in particular,
experimental studies of the
production of isospin 1 bosons in
p-p collisions using a missing-mass
spectrometer

Investigations of the transition
energies and line intensities in
muonic atoms; application of
muonic atom data to the
determination of nuclear
charge distributions; study of
nuclear excitations produced by
muonic atom transitions

Publications and Papers

"Forward Differential Cross Sections
for the Reaction $p+p \rightarrow d+\pi^+$
in the Range 3.4 to 12.3 GeV/c."
Physical Review Letters, Vol. 21,
pp. 853-857, 1968. (With

H. L. Anderson, M. Dixit,
H. J. Evans, K. A. Klare,
D. A. Larson, M. V. Sherbrook,
R. L. Martin, K. W. Edwards,
D. E. Nagle, H. A. Thiessen,
C. K. Hargrove, D. Kessler and
S. Fukui.) Also reported at
XIV International Conference on
High Energy Physics, Vienna, 1968

"Muonic X-Rays in Pb^{206} and
Possible Observation of Nuclear
Polarization." *Physical Review
Letters*, Vol. 22, pp. 221-224, 1969.
(With H. L. Anderson,
C. K. Hargrove, D. Kessler,
J. D. McAndrew and R. J. McKee)

"Neutron Emission from Nuclear
Excitation by Radiationless
Transitions in Mu-Atomic Bi^{209} ."
To be published in *Physical
Review Letters*, June 1969.
(With C. K. Hargrove,
D. Kessler, G. R. Mason,
R. J. McKee and S. Ricci)

Honours and Activities

Chairman of the Canadian 200 GeV
Study Group

Member of N.R.C. Advisory
Committee on Physics. (Nominated
by the Canadian Association of
Physicists)

Chairman of High Energy Physics
Committee of the Canadian
Association of Physicists

D. KESSLER

Research

Boson spectroscopy, in particular,
experimental studies of the
production of isospin 1 bosons in
p-p collisions using a missing-mass
spectrometer

Investigations of the transition
energies and line intensities in
muonic atoms; application of
muonic atom data to the
determination of nuclear charge
distributions; study of nuclear
excitations produced by muonic
atom transitions

Publications and Papers

"Forward Differential Cross Sections
for the Reaction $p+p \rightarrow d+\pi^+$
in the Range 3.4 to 12.3 GeV/c."
Physical Review Letters, Vol. 21,
pp. 853-857, 1968. (With

H. L. Anderson, M. Dixit,
H. J. Evans, K. A. Klare,
D. A. Larson, M. V. Sherbrook,
R. L. Martin, K. W. Edwards,
D. E. Nagle, H. A. Thiessen,
C. K. Hargrove, E. P. Hincks
and S. Fukui.) Also reported at
XIV International Conference
on High Energy Physics,
Vienna, 1968

"Muonic X-Rays in Pb^{206} and
Possible Observation of Nuclear
Polarization." *Physical Review
Letters*, Vol. 22, pp. 221-224, 1969.
(With H. L. Anderson,
C. K. Hargrove, E. P. Hincks,
J. D. McAndrew and R. J. McKee)

"Neutron Emission from Nuclear
Excitation by Radiationless
Transitions in Mu-Atomic Bi^{209} ."
To be published in *Physical
Review Letters*, June 1969
(With C. K. Hargrove,
E. P. Hicks, G. R. Mason,
R. J. McKee and S. Ricci)

Honours and Activities

Member, CUSO National Selection
Committee

Invited participant in the XIV
International Conference on
High Energy Physics, Vienna,
August-September, 1968

R. W. MORRISON

Research

Fast high-voltage pulse generators
Streamer chambers for high-energy
physics experiments

Applications of Kerr-cell optics to
high-voltage pulse measurements
and streamer formation studies

Publications and Papers

"Pi-Pair Production with Polarized
X-Rays." *Il Nuovo Cimento*,
Series X, Vol. 56A, pp. 409-416,
July 21, 1968 (with D. J. Drickey
and R. F. Mozley)

Honours and Activities

Member, CUSO National Selection
Committee

L. RESNICK

Research

Coupled Integral Equations

Final State Interactions
Multi-Regge Model
Partially Conserved Currents

Publications and Papers

"Quasidiffraction Scattering and
Selection Rules for Spin and
Parity." *The Physical Review*,
Vol. 175, No. 5, pp. 2185-2191,
1968. Also presented at the Eastern
Regional Meeting of the
Theoretical Physics Division,
Canadian Association of
Physicists, held at McGill
University, November 16, 1968

"Spin Effects on Mass Spectrum of
Unstable Particles." *Il Nuovo
Cimento*. (To be published.)

"Factorization in the Production of
Resonances Having Spin."
Submitted to *The American
Journal of Physics*

"Rescattering, Omnès Equation, and
Zeros in a Resonance Peak."
Submitted to *The Physical Review*.
Also presented at the Lund Inter-
national Conference on
Elementary Particles

Honours and Activities

Invited to attend the Lund
International Conference on
Elementary Particles, held at
Lund, Sweden, June 25th-July 1,
1969. Travel grant from N.R.C.
for this purpose

Chairman, Canadian 200 GeV
Advisory Committee

M. K. SUNDARESAN

Research

Investigations of Radiationless
Transitions in Muonic Lead
Isotopes

Studies on the reaction
 $p + p \rightarrow D + \text{Boson}$
The Relaxation Problem in Hard
Sphere Gas

Publications and Papers

"Collisional Relaxation in a Hard
Sphere Gas." *Physics Letters*,
Vol. 25A, 1967, pp. 705-706.
(With M. Rahman)

"The Reaction $p + p \rightarrow d + \pi^+$."
Il Nuovo Cimento, Series X, 55A,
p. 346, 1968 (with D. J. Brown)

"Calculation of Relative Intensities of Transitions in Muonic Lead." *Il Nuovo Cimento*, Series X, 57B, p. 235, 1968 (with M. K. Sundaresan)

"Continuum Eigenfunctions for a Hard Sphere Gas." *Canadian Journal of Physics*, 46, p. 2287, 1968 (with M. Rahman)

"Discrete Relaxation Modes for a Hard-Sphere Gas." *Canadian Journal of Physics*, 46, p. 2463 1968 (with M. Rahman)

"Possibility of Another Dynamical Effect in Muonic Atoms." *Physical Review Letters*, 21, No. 22, pp. 1509-1510, 1968 (with V. Srinivasan)

"Radiationless transitions in Muonic Lead." Paper presented at the Eastern Canada Conference on Nuclear Physics, Montreal, June 1, 1968, (with V. Srinivasan)

FACULTY OF ENGINEERING

M. J. BIBBY

Research

Electron beam welding and melting studies

Honours and Activities

Member, Ottawa Valley Chapter, Council of the American Society for Metals

G. W. BIGG

Research

Photoelastic and analytical investigations of geometrical non-linear behaviour of thin elastic shells

Stress analysis of rotating turbomachinery components using the three-dimensional photoelastic technique

Honours and Activities

Chairman, Ottawa Valley Section, Society for Experimental Stress Analysis

Consultant, United Aircraft of Canada Limited, Montreal

R. C. BIGGS

Research

Transpiration cooling of gas turbine blades

Doctoral thesis for McGill University on convective and radiative heat transfer of gases flowing in a vertical tube

Honours and Activities

Ph.D. degree awarded from McGill University, October, 1968

F. W. BLACK

Research

Investigation of some mechanisms involved in flame stabilization

A. R. BOOTHROYD

Research

Physical modelling of silicon planar bipolar transistors; computer-aided device design

Determination of the physical parameters of insulated gate field-effect transistors

Model characterization of VHF power transistors operating in a frequency conversion mode

Basic studies on MOS structures

Publications and Papers

Field-Effect Transistors", Ottawa Section, Institute of Electrical and Electronic Engineers, 4 March, 1969

"Two-dimensional Analysis of Field-Effect Transistor Structures", Research and Development Laboratories, Northern Electric Co. Ltd., Ottawa; Communications Research Centre, Ottawa and Department of Electrical Engineering, McMaster University, Hamilton

Honours and Activities

Elected Fellow, Institute of Electrical and Electronic Engineers, January, 1969

Elected Member, 4.10 Committee on Solid State Circuits, Institute of Electrical and Electronic Engineers, May, 1969

Consultant, Research and

Development Laboratories,
Northern Electric Company,
Ottawa

Consultant, Communications
Research Centre, Ottawa

Corresponding member of
Institute of Electrical and
Electronic Engineers planning
committee for International
Conference on Microelectronics,
to be held in Eastbourne,
England, June, 1969

D. C. COLL

Research

Digital signal processing
Data transmission

Publications and Papers

"A Quantitative Comparison of
Several Adaptive Equalizer
Algorithms", Symposium on
Computer Processing in
Communications, Polytechnic
Institute of Brooklyn, New York,
N.Y., April, 1969 (with
M. C. J. Cowpland)

"Signal Processing and the Fast
Fourier Transform", Ottawa
Section, Institute of Electrical
and Electronics Engineers,
February, 1969

Honours and Activities

Communication Engineer, Digital
Equipment Corporation,
Maynard, Mass., Summer 1969

Consultant, Communications
Research Centre, Ottawa

Consultant, Digital Systems
Associates, Ottawa

Session Chairman, 1969 EEMTIC
and IM Symposium, Ottawa,
May, 1969

Student Activities Co-ordinator,
Ottawa Section, Institute of
Electrical and Electronics
Engineers

M. A. COPELAND

Research

Voltage-variable MOS capacitors
Force measurements on small
magnetic bodies
Optimisation of the hysteresis motor

Dynamic magnetization processes
in ferromagnetic metallic bodies

Honours and Activities

Visiting Professor, Defence
Research Board, Summer, 1968

G. D. CORMACK

Research

Erosion of electrodes in spark gaps
and electromagnetic guns

Electrofluiddynamic propulsion of
gases

Transients on discontinuous trans-
mission lines

Publications and Papers

"Time Domain Reflectometer Return
Loss Measurements", Northern
Electric TM8337-3-68, 24 June,
1968 (with R. P. Manning)

"The Effect of Random, Electrically-
Short Discontinuities on the
Transfer Properties of a Trans-
mission Line", Northern Electric
TM 8337-4-68, 3 September, 1968

"Electrode Ablation in a Spark
Discharge and in an
Electromagnetic Shock Tube",
Canadian Association of Physicists,
University of Waterloo,
25-28 June, 1969 (with A. Sharah)

"Exotic Energy", Power Group,
Institute of Electrical and
Electronics Engineers, Ottawa,
19 November, 1968

E. B. FLETCHER

Research

Response of saturated clays to very
rapid loading

Evaluation of the Hopkinson
pressure bar in the study of soil
mechanics and soil dynamics
problems

Feasibility of the application of
pressure bar techniques in the field
determination of strength and
consolidation parameters of in
situ cohesive soils

Honours and Activities

Secretary Treasurer, Ottawa Valley
Civil Engineers Association

Consultant, McNeely and Lecompte
and Associates Limited

J. A. GOLDAK

Research

Electron beam welding and melting

Honours and Activities

Chairman, Ottawa Valley Chapter,
American Society for Metals

President, Faculty Club, Carleton
University

Member, Energy Sources
Committee, Defence Research
Board

P. JANZEN

Research

Instability of monocoque circular
thin walled cylinders with
initial imperfections using the
finite displacement and finite
element methods

D. A. KASIANCHUK

Research

Doctoral dissertation for University
of California, Berkeley, on
fatigue considerations in the
design of asphalt concrete
pavements

Publications and Papers

"Fatigue Considerations in the
Design and Performance of
Asphalt Pavements", 1968
Conference of the Canadian
Technical Asphalt Association,
Ottawa, November, 1968
(with C. L. Monismith)

"Asphalt Concrete Pavement Design
— Subsystem to Consider the
Fatigue Mode of Distress",
48 Annual Meeting, Highway
Research Board, Washington, D.C.,
January, 1969
(with C. L. Monismith and
W. A. Garrison)

Honours and Activities

Ph.D., University of California,
Berkeley, September, 1968

Member, Committee on the Design
of Pavements for Heavy Aircraft,
Asphalt Institute

Member, Highway Engineering
Education Committee, Canadian
Good Roads Association

Consultant, Construction Engineering
and Architectural Branch, Air
Services, Department of
Transport

R. J. KIND

Research

Boundary layer control by tangential
blowing

End effects in the flow over a
downstream facing step

Publications and Papers

"An Experimental Investigation of a
Low-Speed Circulation-Controlled
Aerofoil", *The Aeronautical
Quarterly*, Vol. XIX, May, 1968
(with D. J. Maull)

"A Calculation Method for
Circulation Control by Tangential
Blowing Around a Bluff Trailing
edge", *The Aeronautical Quarterly*,
Vol. XIX, August 1968

R. F. MANUEL

Research

Behavior of reinforced concrete
deep beams

Bond characteristics of small
reinforcing bars

Sustained load behavior of reinforced
concrete structures

Honours and Activities

Faculty Advisor, Engineering
Institute of Canada

D. A. J. MILLAR

Research

Pressure and flow investigations near
rotating discs in enclosures with
throughflow

Design and testing of three highly
loaded axial turbine blade sections

Development of numerical solutions
of flow equations in turbomachine
components of arbitrary
configuration

Honours and Activities

Member, National Membership
Committee, Canadian Aeronautics
and Space Institute
Member, Turbine Technical
Collaboration Group, Associate

Committee on Propulsion,
National Research Council
Session Chairman, Canadian
Congress of Applied Mechanics,
University of Waterloo, May, 1969
Consultant, Engine Laboratory,
National Research Council

S. T. NICHOLS

Research

Investigation of demodulator
structures of PAM systems for a
broad class of channels
Nonlinear smoothing problems — a
theoretical study
Doctoral dissertation for Carleton
University on linear and non-linear
smoothing problems with
applications to communication
systems

Publications and Papers

"Realizable MAP Estimators",
Faculty of Engineering, Carleton
University, Technical Report,
May, 1968
"Optimum Detection of Analog
Signals", Symposium on
Communication Theory and
Signal Processing, Kingston,
Ontario, 3 June, 1968

Honours and Activities

Ph.D. Carleton University, 30 May,
1969

B. PAGUREK

Research

Development of iterative
computational techniques for
solving optimal control problems
with constraints and singular arcs
Identification and e control
of the blood sugar regulatory
system

Publications and Papers

"The Conjugate Gradient Method
for Optimal Control Problems
with Bounded Control Variables",
Automatica, Vol. 4, 1968,
pp. 337-349 (with C. M. Woodside)
"Conjugate Gradient Optimization
Applied to a Copper Converter
Model", Fourth Congress of the
International Federation of

Automatic Control, Warsaw,
Poland, June, 1969
(with L. K. Nenomen)

Honours and Activities

Chairman, Carleton-Civic Hospital
Liaison Committee for Bio-Medical
Engineering Research and
Development
Member, Advisory Committee,
Bio-Medical Engineering,
Algonquin College of Applied
Arts and Technology

E. G. PLETT

Research

Experimental and analytical
investigation of heat transfer
to the walls of a shock tube from
detonation products
Experimental measurement of
temperature of detonation
products in a shock tube using
a line reversal technique
Experimental measurement of
particle velocities in the shock
tube using a doppler shift technique
Experimental study of
electromagnetic detonations

Publications and Papers

"Electromagnetic Effect on Flows
Behind Gaseous Detonations",
*Journal of American Institute of
Aeronautics and Astronautics*,
May, 1969 (with T. Y. Toong)
"Interaction of Electromagnetically
Produced Shocks with Detonation
Waves", Technical Note, *Journal
of American Institute of
Aeronautics and Astronautics*,
June, 1969
"Electromagnetic Effect on Flows
Behind Gaseous Detonations",
7th Aerospace Sciences Meeting,
American Institute of Aeronautics
and Astronautics, New York, N.Y.,
January, 1969

Honours and Activities

Member, American Institute of
Aeronautics and Astronautics

J. S. RIORDON

Research

Optimal feedback policies for

control of nonlinear systems
Stochastic hill-climbing techniques
Adaptive control of noisy dynamic systems

Publications and Papers

"Some Concepts of Modern Control Theory", ERB-792, National Research Council, August, 54 pp., 1968

"A Mathematical Model for Ordering Power Generation of Inter-connected Thermal-Electric Stations", Transactions of the Engineering Institute of Canada, EIC-69-CE and A1, Vol. 12, No. C-1, January, 1969

"Optimal Feedback Characteristics from Stochastic Automaton Models", Institute of Electrical and Electronics Engineers Transactions on Automatic Control, Vol. AC-14, No. 1, pp. 89-92, February, 1969

"Dual Control Theory", University of Toronto, 10 March, 1969

"An Adaptive Automaton Controller for Discrete-Time Markov Processes", Fourth Congress of the International Federation of Automatic Control, Warsaw, Poland, 19 June, 1969

Honours and Activities

Member, Adaptive and Learning Systems Committee, Institute of Electrical and Electronics Engineers

J. RUPTASH

Publications and Papers

"Engineering Education in the Next 20 Years", Air Industries Association of Canada, Montebello, Quebec, 8 October, 1968

"Growth and Financing of Graduate Studies and Research", Institute for Aerospace Studies, University of Toronto, 27 March, 1969

Honours and Activities

Elected Fellow of the Canadian Aeronautics and Space Institute, 6 May, 1969

G. T. SUTER

Research

Dynamic versus static creep of concrete

Problem of diagonal tension crack width in short reinforced concrete beams

Publications and Papers

"The Diagonal Failure Valley of Reinforced Concrete Beams under Repeated Loading Conditions", International Conference on Shear, Torsion, and Bond in Reinforced and Prestressed Concrete, Coimbatore, India, January, 1969

Honours and Activities

Member, Liaison Committee with Universities and Colleges of Technology, Canadian Capital Chapter, American Concrete Institute

C. R. THOMPSON

Research

Development of fluidic logic devices in a three mode process controller

Design and fabrication of a biopsy sampler

Honours and Activities

Member, Executive, Ottawa Chapter, Association of Professional Engineers of the Province of Ontario

Member, National Membership Committee, Canadian Aeronautics and Space Institute

J. C. VRANA

Research

Losses in turbomachinery: variable cascade simulator design and construction

Cross-flow fan: water flow visualization table built and flow patterns observed

Analysis of linear turbine for high speed ground transportation

Publications and Papers

"A Pressure Signal Generator for

Fluidic Research," Applied Mechanics and Fluids Engineering Conference, Northwestern University, Evanston, Illinois, 16-18 June, 1969 (with C. Callaghan, P. DuPlessis, and M. Suresh)

Honours and Activities

Member, Associate Committee on Propulsion, National Aeronautical Research Committee, Technical Advisory Panel

Consultant, United Aircraft of Canada Limited

J. Y. WONG

Research

Effects of vibration on off-the-road vehicle mobility

Application of vibratory techniques to soil cutting

W. WRIGHT

Research

Effects of strain hardening upon steel rigid frames subject to sidesway

Effects of inelastic beam buckling upon steel rigid frames subject to sidesway

Effects of strain hardening and moment reversal upon the moment-thrust-curvature relationships for steel beam-columns

Automatic design of steel rigid frames by computer

Analysis of precast concrete ribbed barrel roof structures

Honours and Activities

Member, Executive and Chairman, Committee on Safety of the Ottawa Chapter, Association of Professional Engineers of the Province of Ontario

Member, President's Committee on Safety, Association of Professional Engineers of the Province of Ontario

Member, Stand-by Committee of the Canadian Accreditation Board, Canadian Council of Professional Engineers

SCHOOL OF ARCHITECTURE

W. S. COPE

Publications and Papers

"Development of Environmental Controls Course at Harvard Graduate School of Design", July, 1968, private publication

Honours and Activities

Consultant, Componoform, Inc., Cambridge, Mass.

G. G. D. MILNE

Research

Reference systems for environmental studies

16mm. colour time-lapse film of an 18 month period of construction on the Carleton University Center

Contour Photographic Recording of soap film minimum surfaces

Working with the Society for Emotionally Disturbed Children planning a conference on behavioural and environmental criteria

Publications and Papers

"Montage, Memory Map and Inferential Topology", International Conference on General Semantics, 1968

"Computers and the Future of the Building Professions", Canadian Specification Writers Association, 1968

Honours and Activities

Member, Royal Architectural Institute of Canada

Member, A.A.A.S. workshop group on Man and Environment

D. SHADBOLT

Publications and Papers

"Proposal for a Teaching-Office", *Architecture Canada*, December, 1968

"Carleton University, School of Architecture", brochure, pub. Information Office, Carleton University

"The Teaching Environment", teacher-seminar, Algonquin College, May, 1969

Honours and Activities

Chairman, Conference on "the Profession and the Schools", sponsored by Royal Architectural Institute of Canada and the Canada Council, Stanley House, Gaspe, Quebec, August, 1968

Member, Advisory Committee on the development of a program in Architectural Technology, Algonquin College, Ottawa

ADMINISTRATIVE STAFF

W. J. A. BLACK

Research

Study of the formula approach to capital financing at universities in Britain; support has been granted by the British Council

J. CARTER

Honours and Activities

Chairman, Statistical Research Committee, Canadian Library Association

Member of Executive Council, Canadian Association of College and University Libraries, Canadian Library Association

R. DEAKIN

Honours and Activities

Secretary, Ottawa Personnel and Guidance Association

T. E. FARLEY

Publications and Papers

"ETV at Carleton University", *Educational Television Across Canada*, Toronto: META. 1969, pp. 51-52

H. G. GIFFORD

Honours and Activities

Canadian Association of College and University Libraries Liaison Officer, Association of Universities and Colleges of Canada Consulting Service for Small College Libraries

Chairman, International Libraries Hospitality Committee, Canadian Library Association

A. B. LAROSE

Honours and Activities

Member, Executive Committee, Canadian Association of University Business Officers

Chairman, Committee on Tax Matters, Canadian Association of University Business Officers

Consultant to Department of Secretary of State, Higher Education Branch on Regulations to the Federal Fiscal Arrangements Act

Address to the Chartered Accountants Association of Ottawa on "The Universities of Ontario and their Financing"

K. MCCOLGAN

Honours and Activities

Vice-President, Library Association of Ottawa, May 1968—April 1969

President, Library Association of Ottawa, 1969-70

F. J. TURNER

Honours and Activities

Member, Continuing Committee on Faculty Retirement Systems

Member, Joint CPUO/OCUFA Pension Committee

Member, Ontario Branch, Council of The Chartered Institute of Secretaries

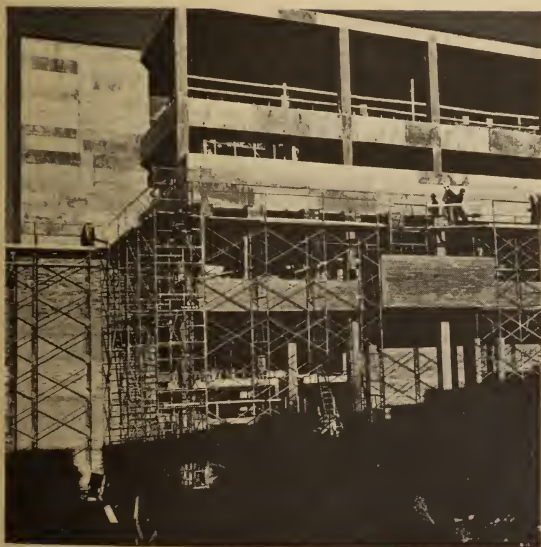
J. E. WHENHAM

Honours and Activities

Appointed Royal Architectural Institute of Canada representative to a national committee for the preparation of policy for the responsibility for safety in the design of temporary structural facilities

Chairman, Ontario Association of Architects, Joint Architect-Engineer Committee

This Report of the President of Carleton
University was printed
by National Printers Limited, Ottawa, Ontario



University Centre construction underway.

